

IN THE UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF TEXAS  
WACO DIVISION

FRESHUB, INC., a Delaware Corporation, and )  
FRESHUB, LTD., an Israeli Limited Liability ) Case No. 6:19-cv-388  
Company, )  
Plaintiffs, ) **DEMAND FOR JURY TRIAL**  
vs. )  
AMAZON.COM, INC., a Delaware )  
Corporation, AMAZON DIGITAL SERVICES, )  
LLC, a Delaware Limited Liability Company, )  
PRIME NOW, LLC, a Delaware Limited )  
Liability Company, and WHOLE FOODS )  
MARKET, INC., a Texas Corporation, )  
Defendants. )  
\_\_\_\_\_  
)

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiffs Freshub, Inc. and Freshub, Ltd. (together “Plaintiffs” or “Freshub”) jointly file this Complaint for Patent Infringement and Demand for Jury Trial against Amazon.com, Inc., Amazon Digital Services, LLC, AmazonFresh, LLC, Prime Now, LLC, and Whole Foods Market, Inc. (collectively “Amazon” or “Defendants”) and allege as follows:

**THE PARTIES**

1. Freshub, Inc. is a Delaware corporation with its principal place of business at 29 South Third Street, Suite 1C, in Brooklyn, New York. Freshub, Inc. is a wholly owned subsidiary of Freshub, Ltd. Freshub, Ltd. is an Israeli limited liability company with its principal place of business in Giv’at Shmuel, Israel. Freshub, Ltd. is a subsidiary of Ikan Holdings, LLC (“Ikan”).

2. Amazon.com, Inc. is a Delaware corporation which maintains its headquarters at 410 Terry Avenue North in Seattle, Washington. Amazon.com, Inc. may be served through

its agent for service of process, Corporation Service Company, 251 Little Falls Drive in Wilmington, Delaware.

3. Amazon Digital Services, LLC is a Delaware limited liability company registered to transact business in Texas with the Texas Secretary of State. Amazon Digital Services, LLC maintains its headquarters at 410 Terry Avenue North in Seattle, Washington. Amazon Digital Services, LLC may be served through its agent for service of process, Corporation Service Company, 251 Little Falls Drive in Wilmington, Delaware. On information and belief, Amazon Digital Services, LLC is a wholly owned subsidiary of Amazon.com, Inc.

4. Prime Now, LLC is a Delaware limited liability company registered to transact business in Texas under the assumed name “AmazonFresh” with the Texas Secretary of State. Prime Now, LLC maintains its headquarters at 410 Terry Avenue North in Seattle, Washington. Prime Now, LLC may be served through its agent for service of process, Corporation Service Company, 251 Little Falls Drive in Wilmington, Delaware, 19808. On information and belief, Prime Now, LLC is a wholly owned subsidiary of Amazon.com, Inc.

5. Whole Foods Market, Inc. is a Texas corporation. Whole Foods Market, Inc. maintains its headquarters at 550 Bowie Street in Austin, Texas. Whole Foods Market, Inc. may be served through its agent for service of process, CT Corporation System, 1999 Bryan Street, Suite 900 in Dallas, Texas, 75201. On information and belief, Whole Foods Market, Inc. is a wholly owned subsidiary of Amazon.com, Inc.

## **JURISDICTION AND VENUE**

6. This action for patent infringement arises under the patent laws of the United States, 35 U.S.C. § 101 *et seq.* This court has original jurisdiction over this controversy pursuant to 28 U.S.C. §§ 1331 and 1338.

7. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(b), (c), and (d), and/or 1400(b).

8. This Court has personal jurisdiction over Amazon because Amazon regularly and continuously does business in this District and has infringed or induced infringement, and continues to do so, in this District. On information and belief, Amazon specifically targets its products and/or services to residents of this District in and around Waco, Texas since at least as early as 2014. Exhibit 1. On information and belief, Amazon maintains a large office employing thousands of workers, including management-level and engineering employees, in this District. Exhibit 4. On information and belief, Amazon maintains around ten Fulfillment Centers in Texas, including a Fulfillment Center to service its customers in this District in or around West, Texas, to provide products and/or services to residents in this District and others. *See Exhibits 2–3.* Further, on information and belief, Amazon maintains other Fulfillment Centers in this District, including in San Marcos and Schertz, Texas. Exhibit 4. Upon information and belief, Amazon’s locations in this District are regular and established places of business. In addition, the Court has personal jurisdiction over Amazon because minimum contacts have been established with the forum and the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice. For example, Amazon advertises active job listings in this District and makes, uses, offers for sale, and sells products or services that infringe the Patents-in-Suit in this District, as further described below.

## **THE PATENTED INNOVATIONS**

9. Ikan developed the technology that enables users to use natural voice commands to build and maintain lists and purchase retail items as early as 2005, and filed patent applications on its inventions related to, *inter alia*, voice processing and voice interpretation technology. The four patents involved in this case resulted from these inventions.

10. On information and belief, Amazon is and has been aware of the patented technologies at issue since at least as early as 2010. For example, Ikan developed a wireless scanner product using related patented technologies in the “smart home” and in-home commerce space which was featured in *The New York Times* in 2008 and *Forbes* as one of “The 10 Best Time-Saving Home Appliances” in 2010. Exhibits 5–6. Only five days later, an Amazon representative working on AmazonFresh requested a copy of the wireless scanner, citing a potential opportunity with Amazon and that he had seen the feature in *Forbes*. Amazon confirmed receipt of the product in November 2010 and stated it intended to try it. At the time, these scanners were shipped in boxes marked with four relevant patents and the further statement that the product within was also covered by “other patents pending.” As such, on information and belief, Amazon was aware that it had received and would be testing patented technology with additional patents pending in the “smart home” and in-home commerce technology space.

11. On information and belief, Amazon is also aware of U.S. Patent No. 9,821,344 (the “‘344 Patent”), filed on December 12, 2005. The ‘344 Patent is an earlier patent in the priority chain shared by all the Asserted Patents, such that it and all the Asserted Patents are directly related. All the Asserted Patents claim priority back through the ‘344 Patent to Provisional Application Serial No. 60/635,122. The ‘344 Patent is a cited reference on the face

of Amazon's U.S. Patent No. 9,165,320. Exhibit 7 (citing the publication number of the '344 Patent, which is US 2006-0178947 A1). In fact, Amazon through its prosecution counsel cited the published application for the '344 Patent for the patent examiner's consideration. Exhibit 8. Thus, on information and belief, Amazon is and has been aware of at least the earliest issued patent in the priority chain of the Asserted Patents and its relevance to Amazon's smart home and in-home commerce technology.

12. Freshub is a leading technology provider and systems integrator in the smart kitchen commerce ecosystem. Freshub brings grocery retailers and appliance manufacturers together to make the smart kitchen a reality, offering consumers full access to online supermarkets via kitchen appliances such as connected microwaves, kitchen music players and smart bins. Consumers can add products to their digital shopping cart by simply waving the package in front of the appliance or using voice commands. Freshub's groundbreaking Smart Kitchen Commerce solution, powered by technology enabling any grocery retailer to connect directly to the customer's kitchen via IoT-driven smart appliances, enables consumers to easily add any grocery item to their carts or shopping lists, and to quickly order or replenish products at any time. The Freshub application allows them to do so in the comfort of their own homes, right from their kitchen, via natural voice commands or with a simple wave of the hand. Freshub additionally helps consumers maximize savings by providing them with purchase history-driven personalized offers and discounts, and enabling them to easily calculate their potential savings.

13. Ikan merged with Freshub, Ltd. and granted all rights, title, and interest in the patents in this case to Freshub, Ltd. Freshhub, Ltd. granted a license to the patents to Freshub, Inc. Freshub's patented technologies include software and cloud-based solutions to problems

encountered by consumers, retailers, and electronic shopping platform providers alike. The ability to manage information and order items by voice removes barriers to entry for in-home shopping by increasing consumer convenience and flexibility. In turn, this greater convenience promotes adoption of the technology that facilitates in-home shopping and enables retailers and electronic shopping platform providers to capture economic activity that was previously unavailable to them. Freshub owns a number of domestic patents and continues to innovate in the Internet of Things (“IoT”) and voice processing space.

14. Amazon is and has been aware of Freshub since at least as early as 2015. From 2015 until as recently as about May 2019, Freshub and Amazon have had ongoing discussions about a potential partnership or collaboration. Amazon and Freshub representatives have even twice participated on a panel together about in-home commerce models and technology at the annual Smart Kitchen Summit (“SKS”), in 2015 (<https://www.smartkitchensummit.com/videos2015/2015/11/7/food-commerce-and-the-smart-kitchen>) and 2018 (<https://www.smartkitchensummit.com/schedule>). Exhibits 9 and 10.

### **FACTUAL BACKGROUND**

15. On March 6, 2018, the United States Patent and Trademark Office (“PTO”) issued U.S. Patent No. 9,908,153 (the “‘153 Patent”) titled SYSTEMS AND METHODS FOR SCANNING INFORMATION FROM STORAGE AREA CONTENTS. The ‘153 Patent lists Fabio Zsigmond, Sion Elie Douer, Geraldo Yoshizawa, and Frederico Wagner as its inventors and states that it was assigned to Ikan Holdings LLC. Attached hereto as Exhibit 11 is a true and correct copy of the ‘153 Patent.

16. Ikan was the sole owner of the ‘153 Patent at the time that it issued. Ikan merged with Freshub, Ltd. and assigned all rights to the ‘153 Patent to Freshub, Ltd. Freshub,

Ltd. conveyed rights to the ‘153 Patent to Freshub, Inc., including the rights to sue, assert, exclude, assign, and license the ‘153 Patent.

17. The ‘153 Patent is generally directed toward a voice processing system to collect, manage, and display information about items described by a user.

18. On February 26, 2019, the PTO issued U.S. Patent No. 10,213,810 (the “‘810 Patent”) titled SYSTEMS AND METHODS FOR SCANNING INFORMATION FROM STORAGE AREA CONTENTS. The ‘810 Patent lists Fabio Zsigmond, Sion Elie Douer, Geraldo Yoshizawa, and Frederico Wagner as its inventors and states that it was assigned to Ikan Holdings LLC. Attached hereto as Exhibit 12 is a true and correct copy of the ‘810 Patent.

19. Ikan was the sole owner of the ‘810 Patent at the time that it issued. Ikan merged with Freshub, Ltd. and assigned all rights to the ‘810 Patent to Freshub, Ltd. Freshub, Ltd. conveyed rights to the ‘810 Patent to Freshub, Inc., including the rights to sue, assert, exclude, assign, and license the ‘810 Patent.

20. The ‘810 Patent is generally directed toward a voice processing system to collect, manage, and display items described by a user and provide a set of items to an item provider.

21. On March 19, 2019, the PTO issued U.S. Patent No. 10,232,408 (the “‘408 Patent”) titled SYSTEMS AND METHODS FOR SCANNING INFORMATION FROM STORAGE AREA CONTENTS. The ‘408 Patent lists Fabio Zsigmond, Sion Elie Douer, Geraldo Yoshizawa, and Frederico Wagner as its inventors and states that it was assigned to Ikan Holdings LLC. Attached hereto as Exhibit 13 is a true and correct copy of the ‘408 Patent.

22. Ikan was the sole owner of the ‘408 Patent at the time that it issued. Ikan merged with Freshub, Ltd. and assigned all rights to the ‘408 Patent to Freshub, Ltd. Freshub, Ltd. conveyed rights to the ‘408 Patent to Freshhub, Inc., including the rights to sue, assert, exclude, assign, and license the ‘408 Patent.

23. The ‘408 Patent is generally directed toward a voice processing system to collect, manage, and display items described by a user and identified within a database.

24. On March 26, 2019, the PTO issued U.S. Patent No. 10,239,094 (the “‘094 Patent”) titled SYSTEMS AND METHODS FOR SCANNING INFORMATION FROM STORAGE AREA CONTENTS. The ‘094 Patent lists Fabio Zsigmond, Sion Elie Douer, Geraldo Yoshizawa, and Frederico Wagner as its inventors and states that it was assigned to Ikan Holdings LLC. Attached hereto as Exhibit 14 is a true and correct copy of the ‘094 Patent.

25. Ikan was the sole owner of the ‘094 Patent at the time that it issued. Ikan merged with Freshub, Ltd. and assigned all rights to the ‘094 Patent to Freshub, Ltd. Freshub, Ltd. conveyed rights to the ‘094 Patent to Freshhub, Inc., including the rights to sue, assert, exclude, assign, and license the ‘094 Patent.

26. The ‘094 Patent is generally directed toward a voice processing system to collect, manage, and display items described by a user and provide a set of items to an item provider.

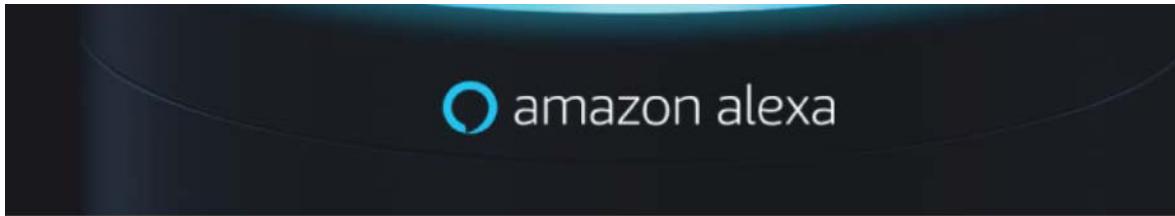
27. The ‘153 Patent, ‘810 Patent, ‘408 Patent, and ‘094 Patent are collectively referred to herein as the “Asserted Patents.”

## **DEFENDANTS' PRODUCTS AND SERVICES**

28. Amazon makes, uses, sells, offers for sale, and/or imports into the United States and this District products and services. Amazon's sells products with Alexa integrated in four product categories which are as follows: Echo, Echo Dot, Echo Spot, Echo Show, Echo Input, and Echo Auto (collectively "Echo Products"); Fire TV Stick, Fire TV Stick 4k, Fire TV Cube, and the Alexa Voice Remote (collectively "Fire TV Products"); Fire 7, Fire HD 8, and Fire HD 10 (collectively "Fire Tablet Products"); Amazon App and Alexa App (collectively "Amazon App Products"). The Echo Products, Fire TV Products, Fire Tablet Products, and Amazon App Products will be collectively referred to as the "Accused Products" and are described in further detail below.

### **Amazon's Products with Alexa**

29. Amazon Alexa is a virtual assistant developed by Amazon and used in products sold by Amazon. Alexa is available on Amazon's Echo Products, Fire TV Products, Fire Tablet Products, and the Amazon Apps. The products with Alexa integrated will listen for and send speech to Alexa's Voice Service in the cloud. The Alexa Voice Service turns the voice into commands such as adding items to a shopping cart or shopping list. As shown below, Amazon Alexa with the Alexa Voice Service is used by Amazon's Echo Products, Fire TV Products, Fire Tablet Products, the Amazon App and the Alexa App.



"Alexa, can I work for you?"

The Amazon Alexa team focuses on bringing user-delighting, voice-activated experiences to Amazon customers. The Alexa team first began with the development of [Amazon Echo](#), a new category of device designed entirely around your voice. It's always ready, connected, and fast — just ask for information, music, news, weather, and more. Echo begins working as soon as it detects the wake word.

But the team of speech scientists, voice designers, developers, and more didn't stop there. The Echo family of devices has grown to include Echo Dot and Amazon Tap, and Alexa is now available on [Fire tablets](#) and [Amazon Fire TV](#). The [Alexa Voice Service](#) is bringing Alexa to other connected products, and the [Alexa Skills Kit \(ASK\)](#) allows third-party developers to easily build and add their own skills to Alexa, like ordering an Uber or making a Capital One credit card payment.

We are currently located in Seattle, Boston, Sunnyvale, Irvine, Poland, Germany, the UK, India (Bangalore), Italy, and Luxembourg, and continue to grow rapidly. We are pioneers working to build the best solutions to unique problems. Come join us.

*Are you looking for careers with Alexa.com, the marketing analytics software service? If you are interested in careers with this team — which is a separate Amazon subsidiary — please visit [alexa.com/about/careers](#).*

Exhibit 15 - [https://amazon.jobs/en/business\\_categories/alexा](https://amazon.jobs/en/business_categories/alexा).

### **Shopping with Alexa**

30. Alexa includes Alexa's Voice Purchasing system which allows customers to use Alexa enabled devices to purchase products from Amazon. A voice command is issued to Alexa such as "add [product] to my shopping cart," and the product is then added to the customer's Amazon shopping cart. Additionally if a voice command is issued to Alexa such as "add [product] to my list", the product is then added to the customer's Alex Shopping List. Alexa is used for adding items to an Amazon Cart, Whole Foods Cart, Fresh Cart, Prime Now Cart, and Alexa Shopping List. As shown below, Shopping with Alexa on Amazon is achieved through Voice Purchasing.

### **Shopping with Alexa**

Amazon Prime members with a U.S. billing address and their 1-Click payment method set up can use Alexa to shop on Amazon.

You can say things like "Order [item name]," "Reorder [item name]," or "Add [item name] to my cart."

When you place an order using Voice Purchasing, Alexa completes the transaction using the default 1-Click payment method in [Your Account](#). Orders you place for physical products using Alexa Voice Purchasing are also eligible for [free returns](#).

Exhibit 16 - <https://www.amazon.com/gp/help/customer/display.html?nodeId=202083830>.

31. As further shown below, Alexa Voice Purchasing is used to add groceries to one's Whole Foods Cart, Fresh Cart, and Prime Now Cart.

**3 ways to shop**

With Alexa, grocery shopping has never been easier. Family members can add items to their grocery cart at any time, and check out from your preferred store when ready.

**WHOLE FOODS MARKET**

"Alexa, add avocados to my Whole Foods cart."

[Learn more about Whole Foods Market delivery \(available in select cities\).](#)

**amazonfresh**

"Alexa, add eggs to my Fresh cart."

[Learn more about Amazon Fresh delivery \(available in select cities\).](#)

**prime now**

"Alexa, add milk to my Prime Now cart."

[Learn more about Prime Now \(available in select cities\).](#)

Exhibit 17 -

[https://www.amazon.com/b/ref=s9\\_acss\\_bw\\_cg\\_VANS\\_7a1\\_w?node=17919794011&pf\\_rd\\_m=ATVPDKIKX0DER&pf\\_rd\\_s=merchandised-search-6&pf\\_rd\\_r=ZB042FZTNT88HEJDMRW5&pf\\_rd\\_t=101&pf\\_rd\\_p=70f1dbbb-fb5b-485a-bbfd-af68d0e2a7f3&pf\\_rd\\_i=14552177011](https://www.amazon.com/b/ref=s9_acss_bw_cg_VANS_7a1_w?node=17919794011&pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-6&pf_rd_r=ZB042FZTNT88HEJDMRW5&pf_rd_t=101&pf_rd_p=70f1dbbb-fb5b-485a-bbfd-af68d0e2a7f3&pf_rd_i=14552177011)

32. As shown below, Alexa is used to add items to the Alexa Shopping List.

**Don't forget it, list it.**

Build your weekly grocery list with Alexa, then check off items in the Amazon app as you shop. Easily share them with your friends and family anytime, anywhere.

[View your list](#)

**Alexa Shopping List**

- + Add item
- Paper towels
- Markers
- Milk
- Bread
- Eggs
- Tomatoes
- Strawberries
- Cereal
- Ice cream
- Toothpaste

Exhibit 17 -

[https://www.amazon.com/b/ref=s9\\_acss\\_bw\\_cg\\_VANS\\_7a1\\_w?node=17919794011&pf\\_rd\\_m=ATVPDKIKX0DER&pf\\_rd\\_s=merchandised-search-6&pf\\_rd\\_r=ZB042FZTNT88HEJDMRW5&pf\\_rd\\_t=101&pf\\_rd\\_p=70f1dbbb-fb5b-485a-bbfd-af68d0e2a7f3&pf\\_rd\\_i=14552177011](https://www.amazon.com/b/ref=s9_acss_bw_cg_VANS_7a1_w?node=17919794011&pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-6&pf_rd_r=ZB042FZTNT88HEJDMRW5&pf_rd_t=101&pf_rd_p=70f1dbbb-fb5b-485a-bbfd-af68d0e2a7f3&pf_rd_i=14552177011).

33. As shown below, the Amazon App uses Alexa for adding items to a user's shopping cart.

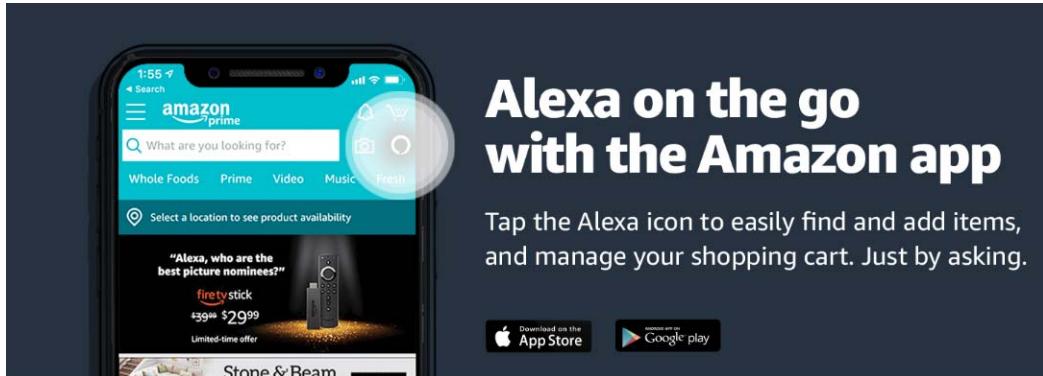


Exhibit 17 -

[https://www.amazon.com/b/ref=s9\\_acss\\_bw\\_cg\\_VANS\\_7a1\\_w?node=17919794011&pf\\_rd\\_m=ATVPDKIKX0DER&pf\\_rd\\_s=merchandised-search-6&pf\\_rd\\_r=ZB042FZTNT88HEJDMRW5&pf\\_rd\\_t=101&pf\\_rd\\_p=70f1dbbb-fb5b-485a-bbfd-af68d0e2a7f3&pf\\_rd\\_i=14552177011](https://www.amazon.com/b/ref=s9_acss_bw_cg_VANS_7a1_w?node=17919794011&pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-6&pf_rd_r=ZB042FZTNT88HEJDMRW5&pf_rd_t=101&pf_rd_p=70f1dbbb-fb5b-485a-bbfd-af68d0e2a7f3&pf_rd_i=14552177011).

### Amazon's Echo Products

34. Amazon develops and sells the Echo Products. The Echo Products are a brand of hands-free smart speakers which use the voice-controlled Alexa service. Echo devices require a wireless internet connection to connect to the cloud component of Alexa and include microphones to capture voice commands. The Echo was the first product to include an Alexa integration. As shown in the two images below, the Echo Products utilize Alexa and Alexa Voice Service for Voice Shopping on Amazon, which includes adding items to a cart and/or a shopping list.

**See what Alexa can do**

**Help around the house**

- ▶ Alexa, add trivia night to my calendar on Tuesday at 8 PM.
- ▶ Alexa, how many tablespoons are in a quarter cup?
- ▶ Alexa, what's on my to-do list?
- ▶ Alexa, add tortillas to my shopping list.
- ▶ Alexa, set an alarm for 7:30 AM.
- ▶ Alexa, remember that my passport is in the upstairs closet.

**Music, media, and entertainment**

Select a question or command to hear sample responses from Alexa, Amazon's cloud-based voice service behind Echo, Echo Dot, Echo Show, Echo Spot, and more.  
[Download the Alexa app](#)



Exhibit 19 - [https://www.amazon.com/dp/B06XCM9LJ4?ref=ODS\\_v2\\_FS\\_AUCC\\_rr](https://www.amazon.com/dp/B06XCM9LJ4?ref=ODS_v2_FS_AUCC_rr).

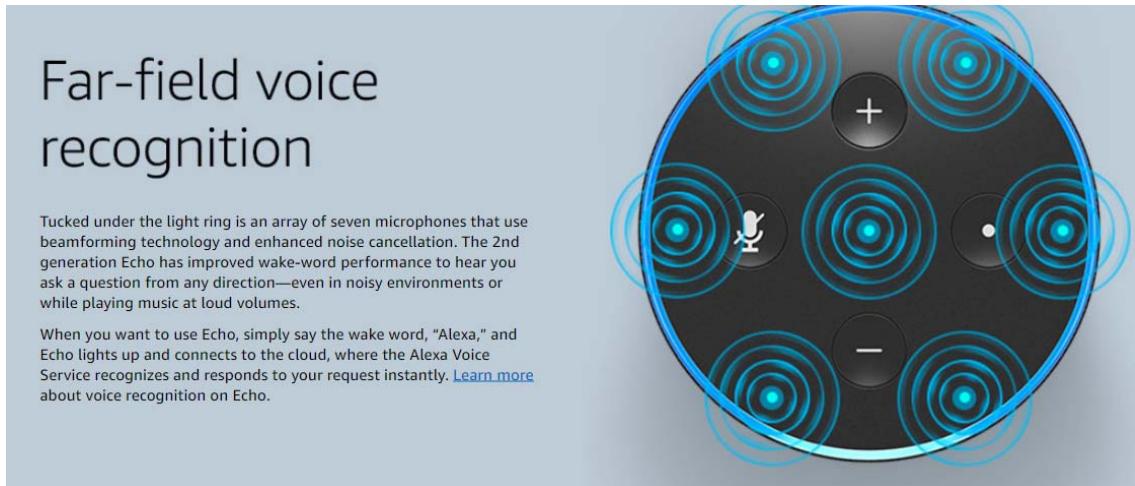


Exhibit 20 - [https://www.amazon.com/dp/B06XCM9LJ4?ref=ODS\\_v2\\_FS\\_AUCC\\_rr&th=1](https://www.amazon.com/dp/B06XCM9LJ4?ref=ODS_v2_FS_AUCC_rr&th=1).

### Amazon's Fire TV Products

35. Amazon develops and sells the Fire TV Products. The Fire TV Products are digital media players developed by Amazon. The Fire TV Stick and Fire TV Stick 4k also include a micro console remote to input voice commands, also called an Alexa Voice Remote. The Fire TV Products integrate the Alexa software into its platform. As shown below, Fire

TV Products utilize Alexa and Alexa Voice Service for Voice Shopping on Amazon, which includes adding items to a cart and/or a shopping list.

The screenshot shows the Alexa on Fire TV interface. At the top, it says "Alexa on Fire TV". Below that, there are two main sections: "Help around the house" and "Movies and TV shows".

**Help around the house:**

- What's on my shopping list?
- Add 'walk the dog' to my to-do list.
- Show the baby's room. [with connected Amazon Cloud Cam]
- Buy HDMI cable.

**Movies and TV shows:**

- Play 'grown-ish'

To the right of the interface, there is a description of Alexa and a physical image of an Amazon TV Cube device.

Alexa, Amazon's cloud-based voice service, is available on Fire TV devices using the included voice remote. Select a question or command to see and hear sample responses from Alexa.



Exhibit 21 - [https://www.amazon.com/dp/B0791T9CV7?ref=ODS\\_v2\\_FS\\_SMP\\_TVCube](https://www.amazon.com/dp/B0791T9CV7?ref=ODS_v2_FS_SMP_TVCube).

### Amazon's Fire Table Products

36. Amazon develops and sells Fire Tablet Products. The Fire Tablet Products are tablet computer devices developed by Amazon. The Fire Tablet Products utilize Amazon Fire OS which includes the integrated Alexa software. As shown below, Fire Tablet Products utilize Alexa and Alexa Voice Service for Voice Shopping on Amazon, which includes adding items to a cart and/or a shopping list.

**Alexa on Fire tablets**

- ▶ Alexa, when do the Seattle Sounders play next?
- ▶ Alexa, what's 68 degrees Fahrenheit in Celsius?
- ▶ Alexa, show me nearby Thai restaurants.

**Around the house**

- ▶ Alexa, dim the lights.
- ▶ Alexa, add milk to my shopping list.
- ▶ Alexa, set a pizza timer for 15 minutes.
- ▶ Alexa, find me a recipe for fried chicken.

Alexa is available on Fire tablets! Alexa provides quick access to the entertainment you want, including music, games, audiobooks, and more. You can also ask Alexa questions, check your calendar, get news, find sports scores, and even control your smart home. All you have to do is ask.

Select a question or command to see and hear sample responses from Alexa.



Exhibits 23–24 - [https://www.amazon.com/dp/B0794RHPZD?ref=ODS\\_v2\\_FS\\_TAB\\_FHD8](https://www.amazon.com/dp/B0794RHPZD?ref=ODS_v2_FS_TAB_FHD8).

### Amazon App Products

37. Amazon develops and provides the Amazon App and Alexa App (collectively “Amazon App Products”), which utilize Alexa for Voice Shopping. The Alexa App is available on Fire OS, Android, iOS, and Windows 10 operating systems, and thus is available as both a mobile and desktop application. As shown in the two pictures below, the Amazon App Products utilize Alexa and Alexa Voice Service for Voice Shopping on Amazon, which includes adding items to a cart and/or a shopping list.

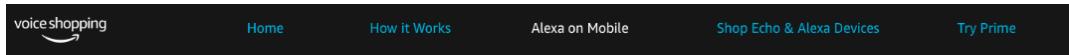


Exhibit 18 -

[https://www.amazon.com/b/ref=s9\\_acss\\_bw\\_cg\\_VANS\\_6a1\\_w?node=17691568011&pf\\_rd\\_m=ATVPDKIKX0DER&pf\\_rd\\_s=merchandised-search-6&p%E2%80%A6](https://www.amazon.com/b/ref=s9_acss_bw_cg_VANS_6a1_w?node=17691568011&pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-6&p%E2%80%A6)

## Talk to Alexa from the Alexa App

With the latest version of the Alexa app for Android and iOS, you can talk to Alexa and use supported Alexa features—like news, weather, Q&A, smart home, skills, and more—directly through the app.

### Compatible Devices

At this time, the Alexa app supports Alexa voice interaction only on Android and iOS devices (running Android OS 5.0+ or iOS 9.0+). To learn how to get or update the Alexa app, go to [Download the Amazon Alexa App](#).

**Note:** Alexa voice interaction is not supported on the Alexa web app (<https://alexa.amazon.com>), or the Alexa app installed on Fire tablets. If you have a compatible Fire tablet, you can use your device's Home button to interact with Alexa. To learn more, go to [Using Alexa on Your Fire Tablet](#).

### Talk to Alexa

To activate Alexa, open the Alexa app and tap the **Alexa** button  in the navigation bar (at the bottom of your screen).

Whenever you activate Alexa, your screen automatically switches to voice mode, with a blue light bar at the bottom. This screen stays open while Alexa listens and responds to your request.

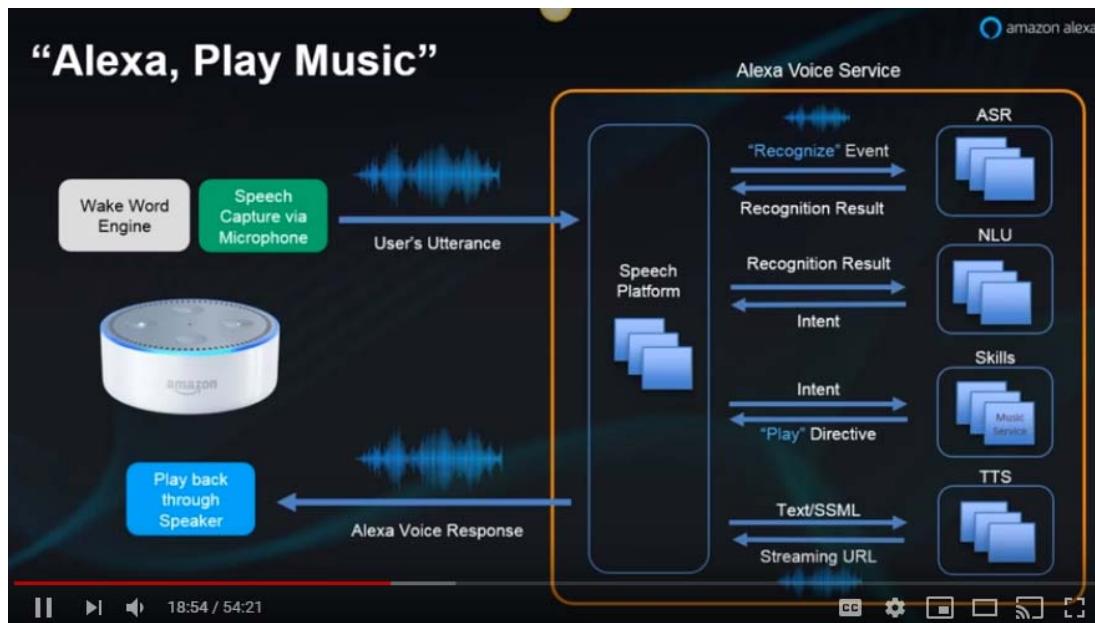
You can use the  button to exit voice mode.

**Note:** For help using Alexa Hands-Free on your supported Prime Exclusive Phone, go to [Using Your Prime Exclusive Phone](#).

Exhibit 25 - <https://www.amazon.com/gp/help/customer/display.html?nodeId=202202210>.

### Alexa Voice Service

38. Alexa Voice Service (“AVS”) is Amazon’s suite of services built around its voice-controlled artificial intelligence (“AI”) assistant Alexa. AVS is tightly integrated with Amazon’s e-commerce environment in order to make purchases fast and simple. AVS is used to power Alexa in the Echo Products, Fire TV Products, Fire Tablet Products, Amazon App Products, and may also be utilized by other third-party hardware makers. The hardware required to utilize AVS includes a microphone array for audio pickup, a processor to run the AVS Client, internet connectivity to send audio to the cloud, and a speaker to play back audio for the customer. The AVS Client program will take the audio picked up by the microphone and send it to AVS in the cloud over the internet for processing. This includes processing requests to add items to a shopping cart or Alexa Shopping List. As shown in the two images and video below, AVS powers Amazon’s Alexa enabled devices.



[https://www.youtube.com/watch?time\\_continue=700&v=t58fUp15YB4](https://www.youtube.com/watch?time_continue=700&v=t58fUp15YB4).

Today, we announced that the **Alexa Voice Service** (AVS), the same service that powers Amazon Echo, is coming soon to third party hardware makers who want to integrate Alexa into their connected devices. Your customers can simply speak to Alexa through the microphone on your device and Alexa will respond through the device's speakers. This gives your customers access to Alexa's skills and capabilities, including both built-in skills and those created by you or other developers using the **Alexa Skills Kit** (ASK). Examples of Alexa skills include the ability to answer general knowledge questions, provide weather forecasts, query Wikipedia and much more.

Exhibit 26 - <https://developer.amazon.com/blogs/post/Tx1IWOJG191LB8X/Announcing-the-Alexa-Voice-Service-AVS>.

### **DEFENDANTS' INFRINGEMENT OF THE PATENTS**

39. Defendants have been and are now infringing, and will continue to infringe, the Asserted Patents in this District and elsewhere in the United States by, among other things, making, using, importing, selling, and/or offering for sale its Echo Products, Fire TV Products, Fire Tablet Products, and Amazon App Products.

40. In addition to directly infringing the Asserted Patents pursuant to 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, or both, Defendants also indirectly infringe the ‘810 Patent, ‘408 Patent, and ‘094 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing, and/or requiring others, including their customers, purchasers, users, and developers, to perform all or some of the steps of the method claims, either literally or under the doctrine of equivalents, or both, of the ‘810 Patent, ‘408 Patent, and ‘094 Patent.

### **COUNT I** **(Direct Infringement of the ‘153 Patent)**

41. Freshub repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

42. Defendants have infringed and continue to infringe Claims 1-11 of the ‘153 Patent in violation of 35 U.S.C. § 271(a).

43. Defendants' infringement is based upon literal infringement or infringement under the doctrine of equivalents, or both.

44. Defendants' acts of making, using, importing, selling, and/or offering for sale infringing products and services have been without the permission, consent, authorization, or license of Freshub.

45. Defendants' infringement includes, but is not limited to, the manufacture, use, sale, importation and/or offer for sale of Defendants' products and services, including the Echo Products, Fire TV Products, Fire Tablet Products, and Amazon App Products (collectively, the "153 Accused Products").

46. The '153 Accused Products infringe the '153 Patent because they have a voice processing system comprising: a first system configured to receive user spoken words comprising: a microphone, a wireless network interface, a digitizer coupled to the microphone, wherein the digitizer is configured to convert spoken words into a digital representation; a first computer; non-transitory memory that stores instructions that when executed by the first computer cause the first system to perform operations comprising: receive via the digitizer a verbal order, comprising at least one item, from a user, wherein the verbal order was captured by the microphone and digitized by the digitizer; immediately transmit, using the wireless network interface, the digitized order to a computer system remote from the first system; the computer system, the computer system comprising: a networks interface; a second computer; non-transitory memory that stores instructions that when executed by the second computer cause the computer system to perform operations comprising: receive, using the network interface, the digitized order from the first system; translate at least a portion of the digitized order to text; identify an item corresponding to the text; add the identified item to a list

associated with the user; enable the list, including the identified item, to be displayed via a user display.

47. Using an Echo Device as an example, as shown below, the ‘153 Accused Products include a microphone (shown by the microphone array) and wireless network interface (shown by the Wi-Fi antenna).

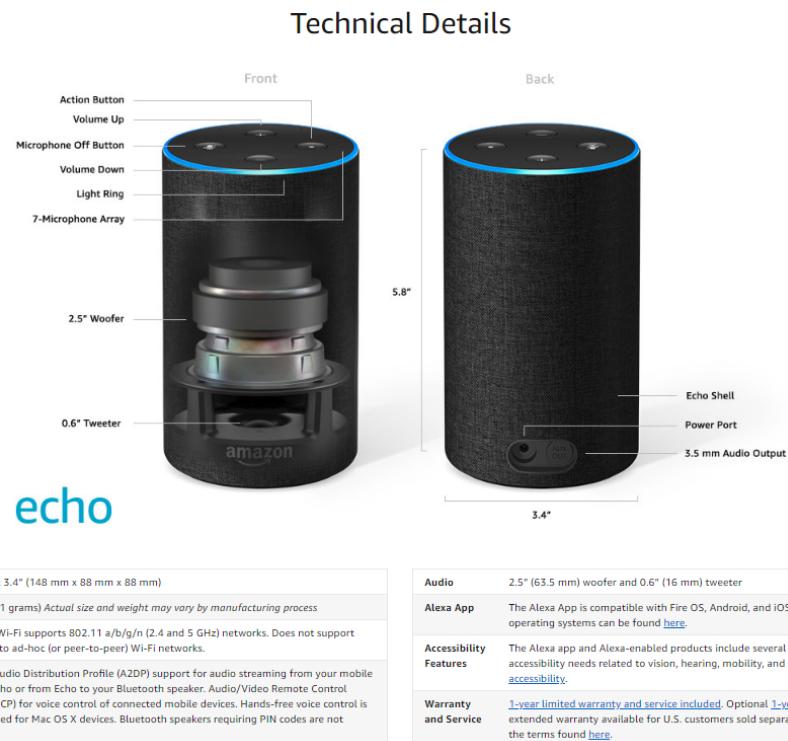


Exhibit 20 - [https://www.amazon.com/dp/B06XCM9LJ4?ref=ODS\\_v2\\_FS\\_AUCC\\_rr&th=1](https://www.amazon.com/dp/B06XCM9LJ4?ref=ODS_v2_FS_AUCC_rr&th=1).

48. Using a Fire Tablet as an example, as shown below, the ‘153 Accused Products include a microphone and wireless network interface (shown by the Wi-Fi antenna).



<b>Wi-Fi connectivity</b>	Single-antenna dual-band Wi-Fi. Supports public and private Wi-Fi networks or hotspots that use the dual-band 802.11a, 802.11b, 802.11g, or 802.11n standard with support for WEP, WPA, and WPA2 security using password authentication; does not support connecting to ad-hoc (or peer-to-peer) Wi-Fi networks
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Exhibit 27 - [https://www.amazon.com/All-New-Fire-Tablet-Display-Black/dp/B0794RHPZD/ref=sr\\_1\\_1?keywords=fire+tablets&qid=1559846204&s=gateway&sr=8-1](https://www.amazon.com/All-New-Fire-Tablet-Display-Black/dp/B0794RHPZD/ref=sr_1_1?keywords=fire+tablets&qid=1559846204&s=gateway&sr=8-1).

49. Using a Fire TV Cube as an example, as shown below, the ‘153 Accused Products include a microphone and wireless network interface (shown by the Wi-Fi antenna).

## “Alexa, turn on the TV.”

With far-field voice recognition, eight microphones, and beamforming technology, Fire TV Cube hears you from any direction. From across the room, just ask Alexa to turn on the TV, adjust the volume, and control playback. Fire TV Cube also comes with the Alexa Voice Remote with TV and volume controls, for when you want to control your TV without making a sound. [Learn more](#) about Alexa on Fire TV Cube.

<b>Wi-Fi connectivity</b>	Dual-band, dual-antenna Wi-Fi (MIMO) for faster streaming and fewer dropped connections than standard Wi-Fi. Supports 802.11a/b/g/n/ac Wi-Fi networks.
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Exhibit 22 - [https://www.amazon.com/dp/B0791T9CV7?ref=ODS\\_v2\\_FS\\_SMP\\_TVCube](https://www.amazon.com/dp/B0791T9CV7?ref=ODS_v2_FS_SMP_TVCube).

50. Further, as shown below, AVS requires the use of a microphone and an internet connection. The ‘153 Accused Products all utilize AVS.



### Hardware Requirements

You'll need a microphone array for audio pickup, a processor to run the AVS client, internet connectivity to send audio to the cloud, and a speaker to play back audio for the customer.

Exhibit 28 - <https://developer.amazon.com/alexavoice-service/learn>.

51. The ‘153 Accused Products, as shown below, also include a digitizer coupled to the microphone which digitized the captured words into pulse code modulation (“PCM”) format and utilizes a recognition event to send the captured spoken words to AVS.

## Recognize Event

The `Recognize` event is used to send user speech to AVS and translate that speech into one or more directives. This event must be sent as a multipart message, consisting of two parts:

- A JSON-formatted object
- The binary audio captured by the product's microphone.

Captured audio that is streamed to AVS should be chunked to reduce latency. The stream should contain 10ms of captured audio per chunk (320 bytes).

After an interaction with Alexa is initiated, the microphone must remain open until:

- A `StopCapture` directive is received.
- The stream is closed by the Alexa service.
- The user manually closes the microphone. For example, a press and hold implementation ([/docs/alexa-voice-service/audio-hardware-configuration.html#applications](#)).

The `profile` parameter and `initiator` object tell Alexa which ASR profile should be used to best understand the captured audio, and how the interaction was initiated.

All captured audio must be sent to AVS in either PCM or Opus, and adhere to the following specifications:

PCM	Opus
16bit Linear PCM	16bit Opus
16kHz sample rate	16kHz sample rate
Single channel	32k bit rate
Little endian byte order	Little endian byte order

Exhibit 29 - <https://developer.amazon.com/docs/alexa-voice-service/speechrecognizer.html>.

52. The ‘153 Accused Products, as shown below and in the video, utilize the AVS Client software to process a verbal request from a user, such as a request to add an item to an Alexa Shopping List, and sends that request via WiFi to Alexa’s remote cloud component.

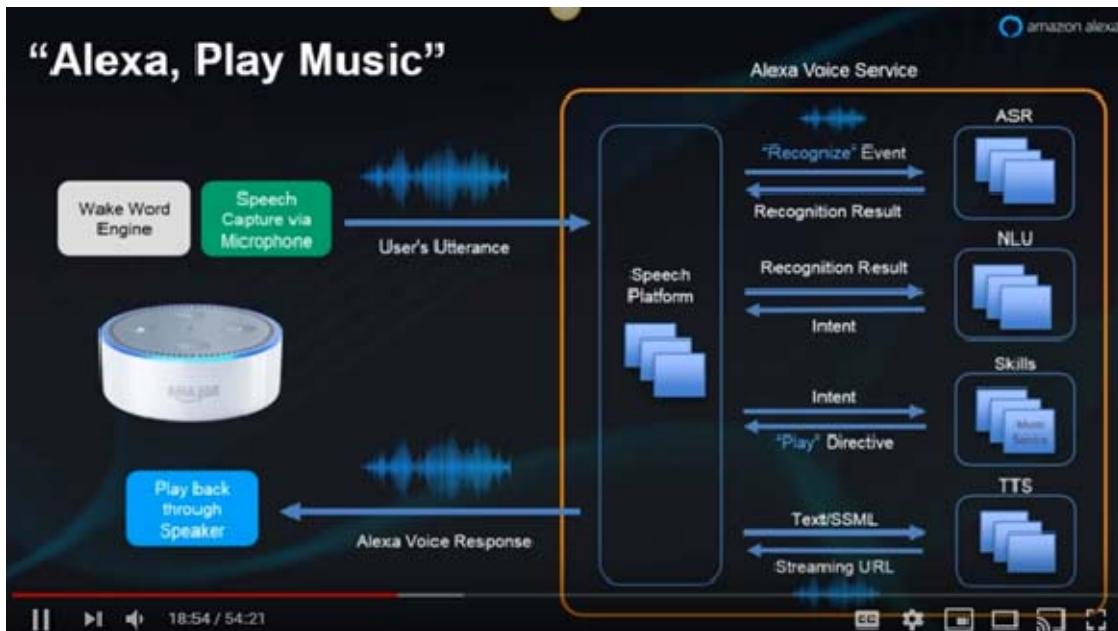
## Communicate with Alexa

- Send and receive messages via JSON payloads
- Maintain connectivity for cloud-initiated actions



[https://www.youtube.com/watch?v=omPvBOJGw\\_U&list=PL2KJmkHeYQTMFumv03WLeGUx31\\_Ub5NwJ&index=4&t=493s](https://www.youtube.com/watch?v=omPvBOJGw_U&list=PL2KJmkHeYQTMFumv03WLeGUx31_Ub5NwJ&index=4&t=493s).

53. The ‘153 Accused Products, as shown in the below image and in the video cited, utilize Alexa Voice Service computers/servers in the cloud (a second computer) to receive a user’s spoken words and will convert those words into an action associated with the user.



[https://www.youtube.com/watch?time\\_continue=700&v=t58fUp15YB4](https://www.youtube.com/watch?time_continue=700&v=t58fUp15YB4).

54. The ‘153 Accused Products, as shown below, utilize Alexa’s Automatic Speech Recognition technology in the cloud, which converts the user’s speech into text and then takes action (such as adding an item to a shopping list).

## Automatic Speech Recognition Profiles

Alexa uses a combination of automatic speech recognition (ASR) and natural language understanding (NLU) to understand customer speech and respond with precision. ASR converts customer speech into text, NLU converts that text into intents for Alexa to act on. At the end of this process Alexa sends directives to your product instructing it to perform an action, like playing music.

Exhibit 30 - <https://developer.amazon.com/fr/docs/alexa-voice-service/audio-hardware-configuration.html>.

55. The ‘153 Accused Products, as shown below, utilize Alexa to take spoken words and translate those words to add items to an Alexa Shopping List associated with the user’s Amazon account. The Amazon Shopping List(s) is viewable to the user via the Amazon App Products, Echo Device with a display, or the Amazon website.

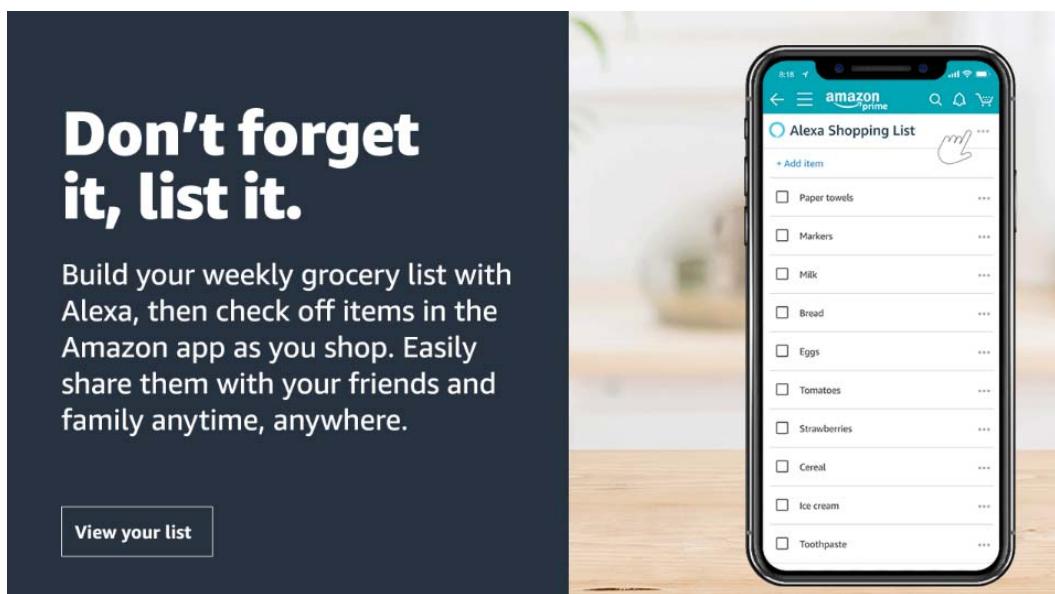


Exhibit 17 -  
[https://www.amazon.com/b/ref=s9\\_acss\\_bw\\_cg\\_VANS\\_7a1\\_w?node=17919794011&pf\\_rd\\_](https://www.amazon.com/b/ref=s9_acss_bw_cg_VANS_7a1_w?node=17919794011&pf_rd_)

m=ATVPDKIKX0DER&pf\_rd\_s=merchandised-search-6&pf\_rd\_r=ZB042FZTNT88HEJDMRW5&pf\_rd\_t=101&pf\_rd\_p=70f1dbbb-fb5b-485a-bbfd-af68d0e2a7f3&pf\_rd\_i=14552177011.

56. Defendants' infringement of the '153 Patent has injured and continues to injure Freshub in an amount to be proven at trial, but not less than a reasonable royalty.

57. On information and belief, Defendants are aware of Freshub's patent portfolio, including the '153 Patent. Amazon knew of and cited the published application for the '344 Patent to a patent examiner for one of Amazon's own patents. All of the Asserted Patents claim priority through the '344 Patent and are thus directly related, such that Amazon was aware of the patent family containing the Asserted Patents. In 2010, Amazon requested and received a copy of a wireless scanner product. The product packaging was marked with four patents and the statement "and other patents pending," such that on information and belief, Amazon was aware of relevant patents and other pending applications in the smart home and in-home commerce technology space. Further, Amazon is and has been aware of Freshub for years, and the two companies have discussed collaborating. Freshub and Amazon have also twice participated together in public discussions regarding smart home and in-home commerce technology and the valuable opportunity that it represents. As a result, on information and belief, Amazon has known of and possessed information regarding the Asserted Patents.

58. Despite knowledge of Freshub's patents, Defendants have sold, used, offered for sale, and continue to sell, use, and offer for sale, the '154 Accused Products, disregarding Freshub's patent rights. Defendants have therefore acted recklessly, and continue to willfully, wantonly, and deliberately engage in acts of infringement of the '153 Patent, justifying an award to Freshub of increased damages under 35 U.S.C. § 284 and attorneys' fees and costs incurred under 35 U.S.C. § 285.

59. Defendants' infringement has caused and is continuing to cause damage and irreparable injury to Freshub, and Freshub will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

60. Freshub is entitled to injunctive relief, damages and any other relief in accordance with 35 U.S.C. §§ 283, 284 and 285.

**COUNT II**  
**(Direct Infringement of the '810 Patent)**

61. Freshub repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

62. Defendants have infringed and continue to infringe Claims 1-29 of the '810 Patent in violation of 35 U.S.C. § 271(a).

63. Defendants' infringement is based upon literal infringement or infringement under the doctrine of equivalents, or both.

64. Defendants' acts of making, using, importing, selling, and/or offering for sale infringing products and services have been without the permission, consent, authorization, or license of Freshub.

65. Defendants' infringement includes, but is not limited to, the manufacture, use, sale, importation and/or offer for sale of Defendants' products and services, including the Echo Products, Fire TV Products, Fire Tablet Products, and Amazon App Products (collectively, the "'810 Accused Products").

66. The '810 Accused Products infringe the '810 Patent because they have a voice processing system comprising: a networks interface; a computer; non-transitory memory that stores instructions that when executed by the computer cause the computer to perform operations comprising: associate a unique identifier with a remote system configured to receive

user spoken words, the remote system comprising: a microphone, a wireless network interface, a voice output system, and a digitizer coupled to the microphone, wherein the digitizer is configured to convert spoken words into a digital representation; download configuration data to the remote system; receive, using the network interface, a digitized order of a user from the remote system; translate at least a portion of the digitized order to text; use the text, translated from the digitized order, to identify an item corresponding to the text description; include the identified item in a set of one or more items associated with the user; enable the set of items, including the identified item, to be displayed to the user via a user device different than the remote system; and enable the set of items, including the identified item, to be provided to an item provider.

67. For example, as shown below using an Echo Device, the ‘810 Accused Products include a microphone (shown by the microphone array) and wireless network interface (shown by the Wi-Fi antenna).



<b>Size</b>	5.8" x 3.4" x 3.4" (148 mm x 88 mm x 88 mm)	<b>Audio</b>	2.5" (63.5 mm) woofer and 0.6" (16 mm) tweeter
<b>Weight</b>	29.0 oz. (821 grams) Actual size and weight may vary by manufacturing process	<b>Alexa App</b>	The Alexa App is compatible with Fire OS, Android, and iOS devices. A list of supported operating systems can be found <a href="#">here</a> .
<b>Wi-Fi connectivity</b>	Dual-band Wi-Fi supports 802.11 a/b/g/n (2.4 and 5 GHz) networks. Does not support connecting to ad-hoc (or peer-to-peer) Wi-Fi networks.	<b>Accessibility Features</b>	The Alexa app and Alexa-enabled products include several features for customers with accessibility needs related to vision, hearing, mobility, and speech. Learn more about <a href="#">Alexa accessibility</a> .
<b>Bluetooth connectivity</b>	Advanced Audio Distribution Profile (A2DP) support for audio streaming from your mobile device to Echo or from Echo to your Bluetooth speaker. Audio/Video Remote Control Profile (AVRCP) for voice control of connected mobile devices. Hands-free voice control is not supported for Mac OS X devices. Bluetooth speakers requiring PIN codes are not supported.	<b>Warranty and Service</b>	<a href="#">1-year limited warranty and service included</a> . Optional <a href="#">1-year</a> , <a href="#">2-year</a> , and <a href="#">3-year</a> extended warranty available for U.S. customers sold separately. Use of Echo is subject to the terms found <a href="#">here</a> .

Exhibit 20 - [https://www.amazon.com/dp/B06XCM9LJ4?ref=ODS\\_v2\\_FS\\_AUCC\\_rr&th=1](https://www.amazon.com/dp/B06XCM9LJ4?ref=ODS_v2_FS_AUCC_rr&th=1).

68. Using a Fire Tablet as an example and as shown below, the ‘810 Accused Products include a microphone and wireless network interface (shown by the Wi-Fi antenna).



<b>Wi-Fi connectivity</b>	Single-antenna dual-band Wi-Fi. Supports public and private Wi-Fi networks or hotspots that use the dual-band 802.11a, 802.11b, 802.11g, or 802.11n standard with support for WEP, WPA, and WPA2 security using password authentication; does not support connecting to ad-hoc (or peer-to-peer) Wi-Fi networks
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Exhibit 27 - [https://www.amazon.com/All-New-Fire-Tablet-Display-Black/dp/B0794RHPZD/ref=sr\\_1\\_1?keywords=fire+tablets&qid=1559846204&s=gateway&sr=8-1](https://www.amazon.com/All-New-Fire-Tablet-Display-Black/dp/B0794RHPZD/ref=sr_1_1?keywords=fire+tablets&qid=1559846204&s=gateway&sr=8-1).

69. Using a Fire TV Cube as an example and as shown below, the ‘810 Accused Products include a microphone and wireless network interface (shown by the Wi-Fi antenna).

### “Alexa, turn on the TV.”

With far-field voice recognition, eight microphones, and beamforming technology, Fire TV Cube hears you from any direction. From across the room, just ask Alexa to turn on the TV, adjust the volume, and control playback. Fire TV Cube also comes with the Alexa Voice Remote with TV and volume controls, for when you want to control your TV without making a sound. [Learn more](#) about Alexa on Fire TV Cube.

<b>Wi-Fi connectivity</b>	Dual-band, dual-antenna Wi-Fi (MIMO) for faster streaming and fewer dropped connections than standard Wi-Fi. Supports 802.11a/b/g/n/ac Wi-Fi networks.
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Exhibit 22 - [https://www.amazon.com/dp/B0791T9CV7?ref=ODS\\_v2\\_FS\\_SMP\\_TVCube](https://www.amazon.com/dp/B0791T9CV7?ref=ODS_v2_FS_SMP_TVCube).

70. Further, as shown below, AVS requires the use of a microphone and an internet connection. The ‘810 Accused Products all utilize AVS.



#### Hardware Requirements

You'll need a microphone array for audio pickup, a processor to run the AVS client, internet connectivity to send audio to the cloud, and a speaker to play back audio for the customer.

#### Exhibit 28 - <https://developer.amazon.com/alexa-voice-service/learn>.

71. As shown below, the '810 Accused Products include a unique device serial number.

## How to get a device serial number

David Dai edited this page on Nov 7, 2017 · 1 revision

Sometimes, Amazon may ask for the device serial number (DSN) of your Alexa-enabled device such as Echo or Echo Show, in order to perform debugging or whitelisting.

Note that for customers of other regions such as UK or Germany, replace amazon.com with amazon.co.uk or amazon.de as needed. Other steps remain the same.

To get the DSN of the Alexa-enabled device:

1. Login to <http://alexa.amazon.com>
2. Go to Settings and under Devices, select the desired device
3. Scroll down to the bottom and find the "Serial number" under About, that is the DSN

#### Exhibit 31 - <https://github.com/alexa/alexa-smarthome/wiki/How-to-get-a-device-serial-number>.

### About this device

The serial number, device IP address and current software version for your device.

#### Exhibit 32 - <https://www.amazon.com/gp/help/customer/display.html?nodeId=202143910>.

72. As shown below, the '810 Accused Products must also be associated with a user's unique account in order to place orders with Alexa (or use Alexa).

## Place Orders with Alexa

You can ask Alexa to place orders for Prime-eligible physical products. On supported devices, you can also ask Alexa to place orders for music.

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When you make a voice purchase request, Alexa searches through Prime-eligible items from your order history.

If an item is available, Alexa tells you the item name and price. Additional details about that item are available in the Alexa app. Then, Alexa asks you to confirm or cancel the order.

You can also ask Alexa to cancel your order immediately after you place it or track your shipped order.

### Requirements

Alexa uses the default shipping address and payment settings in Your Account. Orders you place for physical products are also eligible for free returns.

To place orders, you need:

- An Amazon Prime membership
- A valid payment method
- An Amazon account
- A device with access to Alexa

Exhibit 33 -

[https://www.amazon.com/gp/help/customer/display.html?nodeId=201807210&ref=insider\\_ar\\_tips\\_alexa](https://www.amazon.com/gp/help/customer/display.html?nodeId=201807210&ref=insider_ar_tips_alexa)

73. The '810 Accused Products, as shown below, also include a digitizer coupled to the microphone which digitized the spoken words into PCM format and utilizes a recognition event to send the captured spoken words to AVS.

## Recognize Event

The `Recognize` event is used to send user speech to AVS and translate that speech into one or more directives. This event must be sent as a multipart message, consisting of two parts:

- A JSON-formatted object
- The binary audio captured by the product's microphone.

Captured audio that is streamed to AVS should be chunked to reduce latency. The stream should contain 10ms of captured audio per chunk (320 bytes).

After an interaction with Alexa is initiated, the microphone must remain open until:

- A `StopCapture` directive is received.
- The stream is closed by the Alexa service.
- The user manually closes the microphone. For example, a press and hold implementation ([/docs/alexa-voice-service/audio-hardware-configuration.html#applications](#)).

The `profile` parameter and `initiator` object tell Alexa which ASR profile should be used to best understand the captured audio, and how the interaction was initiated.

All captured audio must be sent to AVS in either PCM or Opus, and adhere to the following specifications:

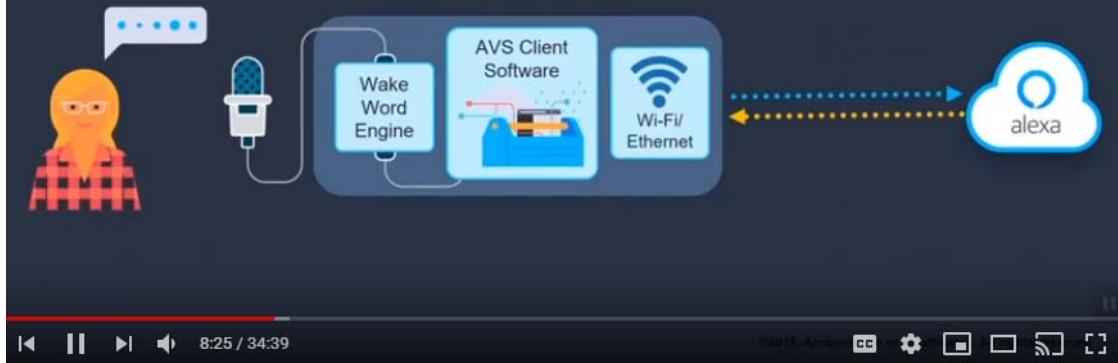
PCM	Opus
16bit Linear PCM	16bit Opus
16kHz sample rate	16kHz sample rate
Single channel	32k bit rate
Little endian byte order	Little endian byte order

Exhibit 29 - <https://developer.amazon.com/docs/alexa-voice-service/speechrecognizer.html>.

74. The ‘810 Accused Products, as shown below and in the video, utilize the AVS Client software to process a verbal order from a user, such as a request to add an item to a shopping cart, and sends that request via WiFi to Alexa’s remote cloud component.

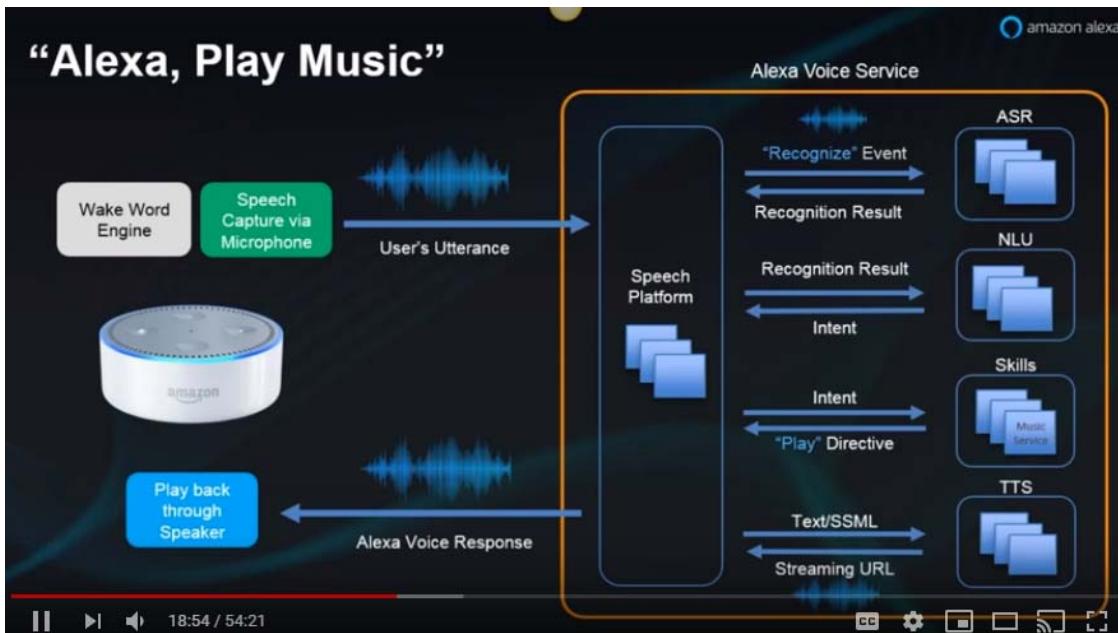
## Communicate with Alexa

- Send and receive messages via JSON payloads
- Maintain connectivity for cloud-initiated actions



[https://www.youtube.com/watch?v=omPvBOJGw\\_U&list=PL2KJmkHeYQTMFumv03WLeGUx31\\_Ub5NwJ&index=4&t=493s](https://www.youtube.com/watch?v=omPvBOJGw_U&list=PL2KJmkHeYQTMFumv03WLeGUx31_Ub5NwJ&index=4&t=493s).

75. The ‘810 Accused Products, as shown in the below image and in the video cited, utilize Alexa Voice Service computers/servers in the cloud to receive a user’s spoken words and will convert those words into an action, such as having the item associated with the user.



[https://www.youtube.com/watch?time\\_continue=700&v=t58fUp15YB4](https://www.youtube.com/watch?time_continue=700&v=t58fUp15YB4).

76. The ‘810 Accused Products, as shown below, utilize Alexa’s Automatic Speech Recognition in the cloud which converts the customer speech into text and then takes action (such as adding an item to a shopping cart).

## Automatic Speech Recognition Profiles

Alexa uses a combination of automatic speech recognition (ASR) and natural language understanding (NLU) to understand customer speech and respond with precision. ASR converts customer speech into text, NLU converts that text into intents for Alexa to act on. At the end of this process Alexa sends directives to your product instructing it to perform an action, like playing music.

Exhibit 30 - <https://developer.amazon.com/fr/docs/alexa-voice-service/audio-hardware-configurations.html>.

77. As shown below, the ‘810 Accused Products settings are configured remotely using the Alexa app and subsequently this configuration data is downloaded to the particular device.

## Amazon Alexa App Settings

You can manage your Alexa device, account, and feature settings from the Alexa app.

### Device Settings

To manage your device settings, select the **Devices**  icon and navigate to your device. Select the + icon to register a new device.

**Note:** Settings options vary by device. Most settings only apply to your selected device, as well.

Exhibit 34 - <https://www.amazon.com/gp/help/customer/display.html?nodeId=201601980>.

78. As shown below in the two images, the ‘810 Accused Products provide ordering items and adding items to a shopping cart via Alexa. These items in the shopping cart can then be viewed using a web browser or Amazon App Product.

## **Shopping with Alexa**

Amazon Prime members with a U.S. billing address and their 1-Click payment method set up can use Alexa to shop on Amazon.

You can say things like "Order [item name]," "Reorder [item name]," or "Add [item name] to my cart."

When you place an order using Voice Purchasing, Alexa completes the transaction using the default 1-Click payment method in [Your Account](#). Orders you place for physical products using Alexa Voice Purchasing are also eligible for [free returns](#).

Exhibit 16 - <https://www.amazon.com/gp/help/customer/display.html?nodeId=202083830>.

## **About the Shopping Cart**

Items added to your Shopping Cart will be available from any compatible web browser or Amazon Mobile app that has been signed in to your account.

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**Tip:** If your Shopping Cart is empty or items are missing from it, it is likely that you are not logged into your account.

Exhibit 35 - <https://www.amazon.com/gp/help/customer/display.html?nodeId=201889540>.

79. Defendants' infringement of the '810 Patent has injured and continues to injure Freshub in an amount to be proven at trial, but not less than a reasonable royalty.

80. On information and belief, Defendants are aware of Freshub's patent portfolio, including the '810 Patent. Amazon knew of and cited the published application for the '344 Patent to a patent examiner for one of Amazon's own patents. All of the Asserted Patents claim priority through the '344 Patent and are thus directly related, such that Amazon was aware of the patent family containing the Asserted Patents. In 2010, Amazon requested and received a copy of a wireless scanner product. The product packaging was marked with four patents and the statement "and other patents pending," such that on information and belief, Amazon was aware of relevant patents and other pending applications in the smart home and in-home commerce technology space. Further, Amazon is and has been aware of Freshub for years, and the two companies have discussed collaborating. Freshub and Amazon have also

twice participated together in public discussions regarding smart home and in-home commerce technology and the valuable opportunity that it represents. As a result, on information and belief, Amazon has known of and possessed information regarding the Asserted Patents.

81. Despite knowledge of Freshub's patents, Defendants have sold, used, offered for sale, and continue to sell, use, and offer for sale, the '810 Accused Products, disregarding Freshhub's patent rights. Defendants have therefore acted recklessly, and continue to willfully, wantonly, and deliberately engage in acts of infringement of the '810 Patent, justifying an award to Freshhub of increased damages under 35 U.S.C. § 284 and attorneys' fees and costs incurred under 35 U.S.C. § 285.

82. Defendants' infringement has caused and is continuing to cause damage and irreparable injury to Freshhub, and Freshhub will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

83. Freshhub is entitled to injunctive relief, damages and any other relief in accordance with 35 U.S.C. §§ 283, 284 and 285.

**COUNT III**  
**(Indirect Infringement of the '810 Patent)**

84. Freshhub repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

85. Defendants have induced infringement of at least Claims 17-27 of the '810 Patent under 35 U.S.C. § 271(b).

86. In addition to directly infringing the '810 Patent, Defendants indirectly infringe the '810 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including customers, purchasers, users and developers, to perform one or more of the steps of the method claims, either literally or under the doctrine of equivalents, of the '810 Patent,

where all the steps of the method claims are performed by either Defendants, its customers, purchasers, users, and developers, or some combination thereof. Defendants knew or were willfully blind to the fact that it was inducing others, including customers, purchasers, users, and developers, to infringe by practicing, either themselves or in conjunction with Defendants, one or more method claims of the ‘810 Patent, including Claims 17-27.

87. Defendants knowingly and actively aided and abetted the direct infringement of the ‘810 Patent by instructing and encouraging its customers, purchasers, users, and developers to use the ‘810 Accused Products. Such instructions and encouragement included, but is not limited to, advising third parties to use the ‘810 Accused Products in an infringing manner, providing a mechanism through which third parties may infringe the ‘810 Patent, and by advertising and promoting the use of the ‘810 Accused Products in an infringing manner, and distributing guidelines and instructions to third parties on how to use the ‘810 Accused Products in an infringing manner.

88. Amazon updates and maintains help and customer service sections on its website which cover in-depth aspects of operating Alexa with the Accused Products in an infringing manner. Further, Amazon advertises on its website the Accused Products infringing Alexa features and instructs consumers on how to configure and use the Accused Products in an infringing manner. *See, e.g.,* Exhibits 36–38,

[https://www.amazon.com/gp/help/customer/display.html?ref=hp\\_bc\\_nav?ie=UTF8&nodeId=201952240](https://www.amazon.com/gp/help/customer/display.html?ref=hp_bc_nav?ie=UTF8&nodeId=201952240); <https://www.amazon.com/gp/help/customer/display.html?nodeId=202009680>;

<https://www.amazon.com/gp/help/customer/display.html?nodeId=201602230>.

89. Defendants’ indirect infringement of the ‘810 Patent has injured and continues to injure Freshub in an amount to be proven at trial, but not less than a reasonable royalty.

90. Defendants' infringement has caused and is continuing to cause damage and irreparable injury to Freshub, and Freshub will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

91. Freshub is entitled to injunctive relief, damages and any other relief in accordance with 35 U.S.C. §§ 283, 284 and 285.

**COUNT IV**  
**(Direct Infringement of the '408 Patent)**

92. Freshub repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

93. Defendants have infringed and continue to infringe Claims 1-30 of the '408 Patent in violation of 35 U.S.C. § 271(a).

94. Defendants' infringement is based upon literal infringement or infringement under the doctrine of equivalents, or both.

95. Defendants' acts of making, using, importing, selling, and/or offering for sale infringing products and services have been without the permission, consent, authorization, or license of Freshub.

96. Defendants' infringement includes, but is not limited to, the manufacture, use, sale, importation and/or offer for sale of Defendants' products and services, including the Echo Products, Fire TV Products, Fire Tablet Products, and Amazon App Products (collectively, the "'408 Accused Products").

97. The '408 Accused Products infringe the '408 Patent because they have a voice processing system comprising: a networks interface; a computer; non-transitory memory that stores instructions that when executed by the computer cause the computer to perform operations comprising: receive, using the network interface, a digitized order of a user from a

remote system configured to receive user spoken words, the remote system comprising a microphone, a wireless network interface, and a digitizer coupled to the microphone, wherein the digitizer is configured to convert spoken words into a digital representation; translate at least a portion of the digitized order to text; match the text, translated from the digitized order, to a text description stored in a database comprising text descriptions of items and associated unique product identifiers; based at least in part on the identified match of the text translated from the digitized order the text description stored in a database, identify an item corresponding to the text; add the identified item to a set of items associated with the user; and enable the set of items, including the identified item, to be displayed via a user display.

98. For example, using an Echo Device as an example and as shown below, the '408 Accused Products include a microphone (shown by the microphone array) and wireless network interface (shown by the Wi-Fi antenna).



<b>Size</b>	5.8" x 3.4" x 3.4" (148 mm x 88 mm x 88 mm)
<b>Weight</b>	29.0 oz. (821 grams) Actual size and weight may vary by manufacturing process
<b>Wi-Fi connectivity</b>	Dual-band Wi-Fi supports 802.11 a/b/g/n (2.4 and 5 GHz) networks. Does not support connecting to ad-hoc (or peer-to-peer) Wi-Fi networks.
<b>Bluetooth connectivity</b>	Advanced Audio Distribution Profile (A2DP) support for audio streaming from your mobile device to Echo or from Echo to your Bluetooth speaker. Audio/Video Remote Control Profile (AVRCP) for voice control of connected mobile devices. Hands-free voice control is not supported for Mac OS X devices. Bluetooth speakers requiring PIN codes are not supported.

<b>Audio</b>	2.5" (63.5 mm) woofer and 0.6" (16 mm) tweeter
<b>Alexa App</b>	The Alexa App is compatible with Fire OS, Android, and iOS devices. A list of supported operating systems can be found <a href="#">here</a> .
<b>Accessibility Features</b>	The Alexa app and Alexa-enabled products include several features for customers with accessibility needs related to vision, hearing, mobility, and speech. Learn more about <a href="#">Alexa accessibility</a> .
<b>Warranty and Service</b>	<a href="#">1-year limited warranty and service included</a> . Optional <a href="#">1-year</a> , <a href="#">2-year</a> , and <a href="#">3-year</a> extended warranty available for U.S. customers sold separately. Use of Echo is subject to the terms found <a href="#">here</a> .

Exhibit 20 - [https://www.amazon.com/dp/B06XCM9LJ4?ref=ODS\\_v2\\_FS\\_AUCC\\_rr&th=1](https://www.amazon.com/dp/B06XCM9LJ4?ref=ODS_v2_FS_AUCC_rr&th=1).

99. Using a Fire Tablet as an example and as shown below, the ‘408 Accused Products include a microphone and wireless network interface (shown by the Wi-Fi antenna).



<b>Wi-Fi connectivity</b>	Single-antenna dual-band Wi-Fi. Supports public and private Wi-Fi networks or hotspots that use the dual-band 802.11a, 802.11b, 802.11g, or 802.11n standard with support for WEP, WPA, and WPA2 security using password authentication; does not support connecting to ad-hoc (or peer-to-peer) Wi-Fi networks
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Exhibit 27 - [https://www.amazon.com/All-New-Fire-Tablet-Display-Black/dp/B0794RHPZD/ref=sr\\_1\\_1?keywords=fire+tablets&qid=1559846204&s=gateway&sr=8-1](https://www.amazon.com/All-New-Fire-Tablet-Display-Black/dp/B0794RHPZD/ref=sr_1_1?keywords=fire+tablets&qid=1559846204&s=gateway&sr=8-1).

100. Using a Fire TV Cube as an example and as shown below, the ‘408 Accused Products include a microphone and wireless network interface (shown by the Wi-Fi antenna).

### **“Alexa, turn on the TV.”**

With far-field voice recognition, eight microphones, and beamforming technology, Fire TV Cube hears you from any direction. From across the room, just ask Alexa to turn on the TV, adjust the volume, and control playback. Fire TV Cube also comes with the Alexa Voice Remote with TV and volume controls, for when you want to control your TV without making a sound. [Learn more](#) about Alexa on Fire TV Cube.

<b>Wi-Fi connectivity</b>	Dual-band, dual-antenna Wi-Fi (MIMO) for faster streaming and fewer dropped connections than standard Wi-Fi. Supports 802.11a/b/g/n/ac Wi-Fi networks.
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Exhibit 22 - [https://www.amazon.com/dp/B0791T9CV7?ref=ODS\\_v2\\_FS\\_SMP\\_TVCube](https://www.amazon.com/dp/B0791T9CV7?ref=ODS_v2_FS_SMP_TVCube).

101. Further, as shown below, AVS requires the use of a microphone and an internet connection. The ‘408 Accused Products all utilize AVS.



#### Hardware Requirements

You'll need a microphone array for audio pickup, a processor to run the AVS client, internet connectivity to send audio to the cloud, and a speaker to play back audio for the customer.

#### Exhibit 28 - <https://developer.amazon.com/alexa-voice-service/learn>.

102. The '408 Accused Products, as shown below, also include a digitizer coupled to the microphone which digitized the spoken words into PCM format and utilizes a recognition event to send the captured spoken words to AVS.

## Recognize Event

The `Recognize` event is used to send user speech to AVS and translate that speech into one or more directives. This event must be sent as a multipart message, consisting of two parts:

- A JSON-formatted object
- The binary audio captured by the product's microphone.

Captured audio that is streamed to AVS should be chunked to reduce latency. The stream should contain 10ms of captured audio per chunk (320 bytes).

After an interaction with Alexa is initiated, the microphone must remain open until:

- A `StopCapture` directive is received.
- The stream is closed by the Alexa service.
- The user manually closes the microphone. For example, a press and hold implementation ([/docs/alexa-voice-service/audio-hardware-configuration.html#applications](#)).

The `profile` parameter and `initiator` object tell Alexa which ASR profile should be used to best understand the captured audio, and how the interaction was initiated.

All captured audio must be sent to AVS in either PCM or Opus, and adhere to the following specifications:

PCM	Opus
16bit Linear PCM	16bit Opus
16kHz sample rate	16kHz sample rate
Single channel	32k bit rate
Little endian byte order	Little endian byte order

#### Exhibit 29 - <https://developer.amazon.com/docs/alexa-voice-service/speechrecognizer.html>.

103. The '408 Accused Products, as shown below and in the video, utilize the AVS Client software to process a verbal order from a user, such as a request to add an item to a shopping cart, and sends that request via WiFi to Alexa's remote cloud component.

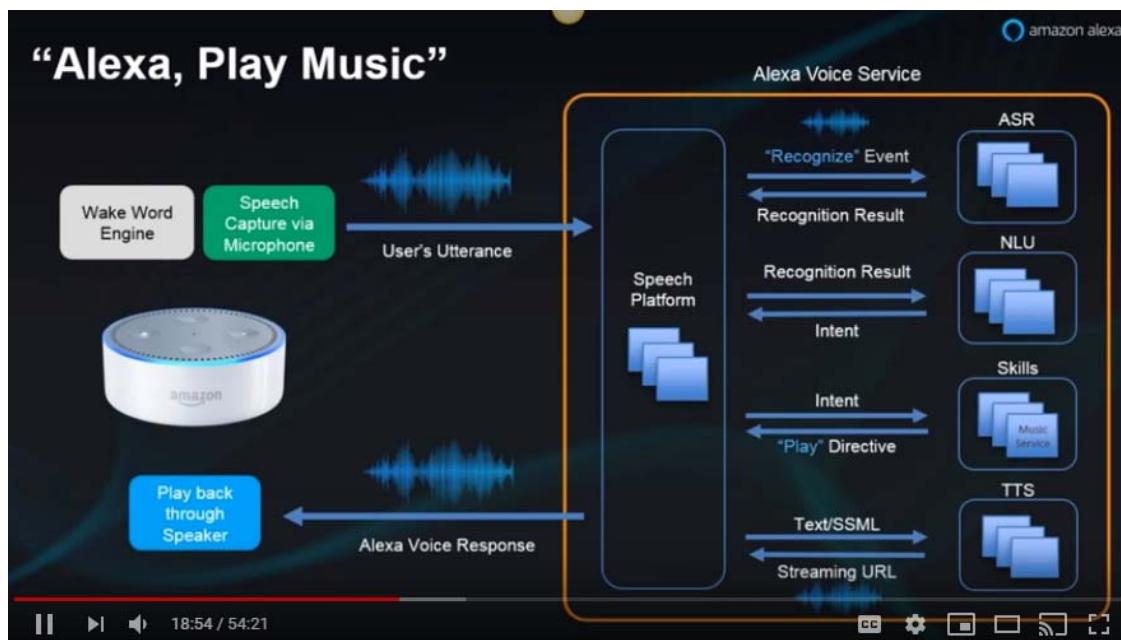
## Communicate with Alexa

- Send and receive messages via JSON payloads
- Maintain connectivity for cloud-initiated actions



[https://www.youtube.com/watch?v=omPvBOJGw\\_U&list=PL2KJmkHeYQTMFumv03WLeGUx31\\_Ub5NwJ&index=4&t=493s](https://www.youtube.com/watch?v=omPvBOJGw_U&list=PL2KJmkHeYQTMFumv03WLeGUx31_Ub5NwJ&index=4&t=493s).

104. The '408 Accused Products, as shown in the below image and in the video cited, utilize Alexa Voice Service computers/servers in the cloud to receive a user's spoken words and convert those words into an action, such as having the item associated with the user. Further the action will involve using the text description derived from the Automatic Speech Recognition component and matching that with a database of text descriptions of products and their unique product identifiers. Alexa will use the unique product identifier to put the appropriate item in the users shopping cart.



[https://www.youtube.com/watch?time\\_continue=700&v=t58fUp15YB4.](https://www.youtube.com/watch?time_continue=700&v=t58fUp15YB4)

105. The ‘408 Accused Products, as shown below, utilize Alexa’s Automatic Speech Recognition in the cloud which converts the customer speech into text and then takes (such as adding an item to a shopping cart that has a unique identifier).

## Automatic Speech Recognition Profiles

Alexa uses a combination of automatic speech recognition (ASR) and natural language understanding (NLU) to understand customer speech and respond with precision. ASR converts customer speech into text, NLU converts that text into intents for Alexa to act on. At the end of this process Alexa sends directives to your product instructing it to perform an action, like playing music.

Exhibit 30 - <https://developer.amazon.com/fr/docs/alexa-voice-service/audio-hardware-configurations.html>.

106. As shown below, Amazon utilizes unique product identifiers for the products that are purchased from the site. These include Universal Product Codes (“UPCs”), European Article Numbers (“EANs”), International Standard Book Numbers (“ISBNs”), and Amazon Standard Identification Numbers (“ASINs”), which are used by the ‘408 Accused Products to add items to a user’s shopping cart after a verbal order is placed.

## What are UPCs, EANs, ISBNs, and ASINs?

### UPC

Universal Product Code (UPC) is a 12-digit bar code used extensively for retail packaging in United States.



### EAN

The European Article Number (EAN) is a barcode standard, a 12- or 13-digit product identification code. Each EAN uniquely identifies the product, manufacturer, and its attributes; typically, the EAN is printed on a product label or packaging as a bar code. We require EAN codes to improve quality of search results and the quality of the catalog as a whole. You can obtain EANs from the manufacturer. If your products do not have manufacturer EANs, and you need to buy EAN codes, you; should go directly to GS1 UK <http://www.gs1uk.org>

For example, the EAN of "Colgate Total 75 ml" is 4011200296908



### ISBN

The International Standard Book Number (ISBN) is a unique commercial book identifier barcode. Each ISBN code identifies uniquely a book. ISBN have either 10 or 13 digits. All ISBN assigned after 1 Jan 2007 have 13 digits. Typically, the ISBN is printed on the back cover of the book.

For example, the ISBN code for J.K.Rowling's "Harry Potter and the Deathly Hallows", Adult Edition, Paperback, UK edition is 978-0747595823, and this code identifies uniquely this book and edition.



### ASINs

Amazon Standard Identification Numbers (ASINs) are unique blocks of 10 letters and/or numbers that identify items. You can find the ASIN on the item's product information page at Amazon.com. For books, the ASIN is the same as the ISBN number, but for all other products a new ASIN is created when the item is uploaded to our catalogue. You will find an item's ASIN on the product detail page alongside further details relating to the item, which may include information such as size, number of pages (if it's a book) or number of discs (if it's a CD).

ASINs can be used to search for items in our catalogue. If you know the ASIN or ISBN of the item you are looking for, simply type it into the search box (which can be found near the top of most pages), hit the "Go" button and, if the item is listed in our catalogue, it will appear in your search results.

For example, the ASIN for Hasbro's "Monopoly" game is B0000SNSPF.

Exhibit 39 - <https://www.amazon.com/gp/seller/asin-upc-isbn-info.html>.

107. As shown below in the two images, the '408 Accused Products enable ordering items and adding items to a shopping cart via Alexa. These items in the shopping cart can then be viewed using a web browser or Amazon App Product.

## Shopping with Alexa

Amazon Prime members with a U.S. billing address and their 1-Click payment method set up can use Alexa to shop on Amazon.

You can say things like "Order [item name]," "Reorder [item name]," or "Add [item name] to my cart."

When you place an order using Voice Purchasing, Alexa completes the transaction using the default 1-Click payment method in [Your Account](#). Orders you place for physical products using Alexa Voice Purchasing are also eligible for [free returns](#).

Exhibit 16 - <https://www.amazon.com/gp/help/customer/display.html?nodeId=202083830>.

## About the Shopping Cart

Items added to your Shopping Cart will be available from any compatible web browser or Amazon Mobile app that has been signed in to your account.

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**Tip:** If your Shopping Cart is empty or items are missing from it, it is likely that you are not logged into your account.

Exhibit 35 - <https://www.amazon.com/gp/help/customer/display.html?nodeId=201889540>.

108. Defendants' infringement of the '408 Patent has injured and continues to injure Freshub in an amount to be proven at trial, but not less than a reasonable royalty.

109. On information and belief, Defendants are aware of Freshub's patent portfolio, including the '408 Patent. Amazon knew of and cited the published application for the '344 Patent to a patent examiner for one of Amazon's own patents. All of the Asserted Patents claim priority through the '344 Patent and are thus directly related, such that Amazon was aware of the patent family containing the Asserted Patents. In 2010, Amazon requested and received a copy of a wireless scanner product. The product packaging was marked with four patents and the statement "and other patents pending," such that on information and belief, Amazon was aware of relevant patents and other pending applications in the smart home and in-home commerce technology space. Further, Amazon is and has been aware of Freshub for years, and the two companies have discussed collaborating. Freshub and Amazon have also twice participated together in public discussions regarding smart home and in-home commerce technology and the valuable opportunity that it represents. As a result, on information and belief, Amazon has known of and possessed information regarding the Asserted Patents.

110. Despite knowledge of Freshub's patents, Defendants have sold, used, offered for sale, and continue to sell, use, and offer for sale, the '408 Accused Products, disregarding Freshub's patent rights. Defendants have therefore acted recklessly, and continue to willfully,

wantonly, and deliberately engage in acts of infringement of the ‘408 Patent, justifying an award to Freshub of increased damages under 35 U.S.C. § 284 and attorneys’ fees and costs incurred under 35 U.S.C. § 285.

111. Defendants’ infringement has caused and is continuing to cause damage and irreparable injury to Freshub, and Freshub will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

112. Freshub is entitled to injunctive relief, damages and any other relief in accordance with 35 U.S.C. §§ 283, 284 and 285.

**COUNT V**  
**(Indirect Infringement of the ‘408 Patent)**

113. Freshub repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

114. Defendants have induced infringement of at least Claims 20-29 of the ‘408 Patent under 35 U.S.C. § 271(b).

115. In addition to directly infringing the ‘408 Patent, Defendants indirectly infringe the ‘408 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including customers, purchasers, users and developers, to perform one or more of the steps of the method claims, either literally or under the doctrine of equivalents, of the ‘408 Patent, where all the steps of the method claims are performed by either Defendants, its customers, purchasers, users, and developers, or some combination thereof. Defendants knew or were willfully blind to the fact that it was inducing others, including customers, purchasers, users, and developers, to infringe by practicing, either themselves or in conjunction with Defendants, one or more method claims of the ‘408 Patent, including Claims 20-29.

116. Defendants knowingly and actively aided and abetted the direct infringement of the ‘408 Patent by instructing and encouraging its customers, purchasers, users, and developers to use the ‘408 Accused Products. Such instructions and encouragement included, but is not limited to, advising third parties to use the ‘408 Accused Products in an infringing manner, providing a mechanism through which third parties may infringe the ‘408 Patent, and by advertising and promoting the use of the ‘408 Accused Products in an infringing manner, and distributing guidelines and instructions to third parties on how to use the ‘408 Accused Products in an infringing manner.

117. Amazon updates and maintains help and customer service sections on its website which cover in-depth aspects of operating Alexa with the Accused Products in an infringing manner. Further, Amazon advertises on its website the Accused Products infringing Alexa features and instructs consumers on how to configure and use the Accused Products in an infringing manner. *See, e.g.*, Exhibits 36–38,

[https://www.amazon.com/gp/help/customer/display.html/ref=hp\\_bc\\_nav?ie=UTF8&nodeId=201952240](https://www.amazon.com/gp/help/customer/display.html/ref=hp_bc_nav?ie=UTF8&nodeId=201952240); <https://www.amazon.com/gp/help/customer/display.html?nodeId=202009680>;

<https://www.amazon.com/gp/help/customer/display.html?nodeId=201602230>.

118. Defendants’ indirect infringement of the ‘408 Patent has injured and continues to injure Freshub in an amount to be proven at trial, but not less than a reasonable royalty.

119. Defendants’ infringement has caused and is continuing to cause damage and irreparable injury to Freshub, and Freshub will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

120. Freshub is entitled to injunctive relief, damages and any other relief in accordance with 35 U.S.C. §§ 283, 284 and 285.

**COUNT VI**  
**(Direct Infringement of the ‘094 Patent)**

121. Freshub repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

122. Defendants have infringed and continue to infringe Claims 1-24 of the ‘094 Patent in violation of 35 U.S.C. § 271(a).

123. Defendants’ infringement is based upon literal infringement or infringement under the doctrine of equivalents, or both.

124. Defendants’ acts of making, using, importing, selling, and/or offering for sale infringing products and services have been without the permission, consent, authorization, or license of Freshub.

125. Defendants’ infringement includes, but is not limited to, the manufacture, use, sale, importation and/or offer for sale of Defendants’ products and services, including the Echo Products, Fire TV Products, Fire Tablet Products, and Amazon App Products (collectively, the “‘094 Accused Products”).

126. The ‘094 Accused Products infringe the ‘094 Patent because it performs a computer-implemented method, the method comprising: receiving over a network at a first computer system, using a network interface, a digitized spoken user order from a second computer system, the second computer system comprising: a microphone, a wireless network interface, and a digitizer coupled to the microphone, wherein the digitizer is configured to convert spoken words into a digital representation, and the second computer system is configured to transmit the digital representation over the network to the first computer system; translating, using a translation module executed by the second computer system, at least a portion of the digitized spoken order to text; matching the text, translated from the digitized

spoken order, to text descriptions of items, wherein the text descriptions of items are stored in a data store; based on at least an identified match, identifying a corresponding item; adding the identified corresponding item to a list associated with the user; and enabling the list, including the identified item, to be displayed to the user via a user display.

127. Using an Echo Device as an example, as shown below, the ‘094 Accused Products Accused Products include a microphone (shown by the microphone array) and wireless network interface (shown by the Wi-Fi antenna).

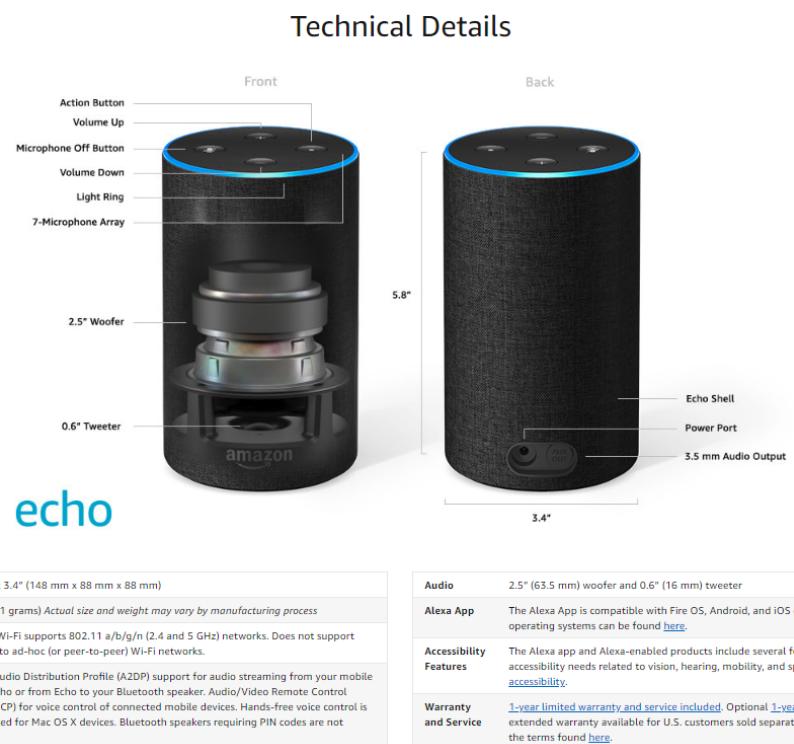


Exhibit 20 - [https://www.amazon.com/dp/B06XCM9LJ4?ref=ODS\\_v2\\_FS\\_AUCC\\_rr&th=1](https://www.amazon.com/dp/B06XCM9LJ4?ref=ODS_v2_FS_AUCC_rr&th=1).

128. Using a Fire Tablet as an example and as shown below, the ‘094 Accused Products include a microphone and wireless network interface (shown by the Wi-Fi antenna).



<b>Wi-Fi connectivity</b>	Single-antenna dual-band Wi-Fi. Supports public and private Wi-Fi networks or hotspots that use the dual-band 802.11a, 802.11b, 802.11g, or 802.11n standard with support for WEP, WPA, and WPA2 security using password authentication; does not support connecting to ad-hoc (or peer-to-peer) Wi-Fi networks
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Exhibit 27 - [https://www.amazon.com/All-New-Fire-Tablet-Display-Black/dp/B0794RHPZD/ref=sr\\_1\\_1?keywords=fire+tablets&qid=1559846204&s=gateway&sr=8-1](https://www.amazon.com/All-New-Fire-Tablet-Display-Black/dp/B0794RHPZD/ref=sr_1_1?keywords=fire+tablets&qid=1559846204&s=gateway&sr=8-1).

129. Using a Fire TV Cube as an example and as shown below, the ‘094 Accused Products include a microphone and wireless network interface (shown by the Wi-Fi antenna).

### **“Alexa, turn on the TV.”**

With far-field voice recognition, eight microphones, and beamforming technology, Fire TV Cube hears you from any direction. From across the room, just ask Alexa to turn on the TV, adjust the volume, and control playback. Fire TV Cube also comes with the Alexa Voice Remote with TV and volume controls, for when you want to control your TV without making a sound. [Learn more](#) about Alexa on Fire TV Cube.

<b>Wi-Fi connectivity</b>	Dual-band, dual-antenna Wi-Fi (MIMO) for faster streaming and fewer dropped connections than standard Wi-Fi. Supports 802.11a/b/g/n/ac Wi-Fi networks.
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Exhibit 22 - [https://www.amazon.com/dp/B0791T9CV7?ref=ODS\\_v2\\_FS\\_SMP\\_TV\\_Cube](https://www.amazon.com/dp/B0791T9CV7?ref=ODS_v2_FS_SMP_TV_Cube).

130. Further, as shown below, AVS requires the use of a microphone and an internet connection. The ‘094 Accused Products all utilize AVS.



#### Hardware Requirements

You'll need a microphone array for audio pickup, a processor to run the AVS client, internet connectivity to send audio to the cloud, and a speaker to play back audio for the customer.

Exhibit 28 - <https://developer.amazon.com/alexavoice-service/learn>.

131. The ‘094 Accused Products, as shown below, also include a digitizer coupled to the microphone which digitized the spoken words into PCM format and utilizes a recognition event to send the captured spoken words to AVS.

## Recognize Event

The `Recognize` event is used to send user speech to AVS and translate that speech into one or more directives. This event must be sent as a multipart message, consisting of two parts:

- A JSON-formatted object
- The binary audio captured by the product's microphone.

Captured audio that is streamed to AVS should be chunked to reduce latency. The stream should contain 10ms of captured audio per chunk (320 bytes).

After an interaction with Alexa is initiated, the microphone must remain open until:

- A `StopCapture` directive is received.
- The stream is closed by the Alexa service.
- The user manually closes the microphone. For example, a press and hold implementation ([/docs/alexa-voice-service/audio-hardware-configuration.html#applications](#)).

The `profile` parameter and `initiator` object tell Alexa which ASR profile should be used to best understand the captured audio, and how the interaction was initiated.

All captured audio must be sent to AVS in either PCM or Opus, and adhere to the following specifications:

PCM	Opus
16bit Linear PCM	16bit Opus
16kHz sample rate	16kHz sample rate
Single channel	32k bit rate
Little endian byte order	Little endian byte order

Exhibit 29 - <https://developer.amazon.com/docs/alexa-voice-service/speechrecognizer.html>.

132. The ‘094 Accused Products, as shown below and in the video, utilize the AVS Client software to process a verbal order from a user, such as a request to add an item to a shopping cart, and sends that request via WiFi to Alexa’s remote cloud component.

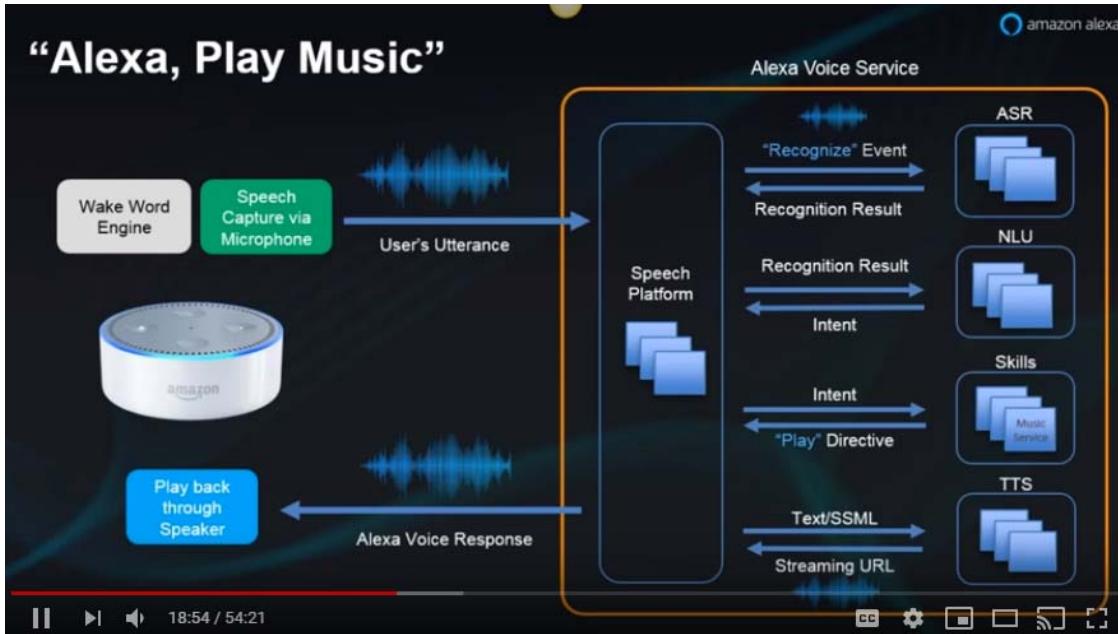
## Communicate with Alexa

- Send and receive messages via JSON payloads
- Maintain connectivity for cloud-initiated actions



[https://www.youtube.com/watch?v=omPvBOJGw\\_U&list=PL2KJmkHeYQTMFumv03WLeGUx31\\_Ub5NwJ&index=4&t=493s](https://www.youtube.com/watch?v=omPvBOJGw_U&list=PL2KJmkHeYQTMFumv03WLeGUx31_Ub5NwJ&index=4&t=493s).

133. The '094 Accused Products, as shown in the below image and in the video cited, utilize Alexa Voice Service computers/servers in the cloud to receive a user's spoken words and will convert those words into an action, such as having the item associated with the user and placed in the user's shopping cart. This process includes matching the text description derived from the ASP component with descriptions in a data store that Amazon maintains.



[https://www.youtube.com/watch?time\\_continue=700&v=t58fUp15YB4.](https://www.youtube.com/watch?time_continue=700&v=t58fUp15YB4)

134. The '094 Accused Products, as shown below, utilize Alexa's Automatic Speech Recognition in the cloud which converts the customer speech into text and then takes action (such as adding an item to a shopping cart).

## Automatic Speech Recognition Profiles

Alexa uses a combination of automatic speech recognition (ASR) and natural language understanding (NLU) to understand customer speech and respond with precision. ASR converts customer speech into text, NLU converts that text into intents for Alexa to act on. At the end of this process Alexa sends directives to your product instructing it to perform an action, like playing music.

Exhibit 30 - <https://developer.amazon.com/fr/docs/alexa-voice-service/audio-hardware-configurations.html>.

135. As shown below in the two images, the '094 Accused Products provide ordering items and adding items to a shopping cart via Alexa. These items in the shopping cart can then be viewed using a web browser or Amazon App Product.

## **Shopping with Alexa**

Amazon Prime members with a U.S. billing address and their 1-Click payment method set up can use Alexa to shop on Amazon.

You can say things like "Order [item name]," "Reorder [item name]," or "Add [item name] to my cart."

When you place an order using Voice Purchasing, Alexa completes the transaction using the default 1-Click payment method in [Your Account](#). Orders you place for physical products using Alexa Voice Purchasing are also eligible for [free returns](#).

Exhibit 16 - <https://www.amazon.com/gp/help/customer/display.html?nodeId=202083830>.

## **About the Shopping Cart**

Items added to your Shopping Cart will be available from any compatible web browser or Amazon Mobile app that has been signed in to your account.

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**Tip:** If your Shopping Cart is empty or items are missing from it, it is likely that you are not logged into your account.

Exhibit 35 - <https://www.amazon.com/gp/help/customer/display.html?nodeId=201889540>.

136. Defendants' infringement of the '094 Patent has injured and continues to injure Freshub in an amount to be proven at trial, but not less than a reasonable royalty.

137. On information and belief, Defendants are aware of Freshub's patent portfolio, including the '094 Patent. Amazon knew of and cited the published application for the '344 Patent to a patent examiner for one of Amazon's own patents. All of the Asserted Patents claim priority through the '344 Patent and are thus directly related, such that Amazon was aware of the patent family containing the Asserted Patents. In 2010, Amazon requested and received a copy of a wireless scanner product. The product packaging was marked with four patents and the statement "and other patents pending," such that on information and belief, Amazon was aware of relevant patents and other pending applications in the smart home and in-home commerce technology space. Further, Amazon is and has been aware of Freshub for years, and the two companies have discussed collaborating. Freshub and Amazon have also

twice participated together in public discussions regarding smart home and in-home commerce technology and the valuable opportunity that it represents. As a result, on information and belief, Amazon has known of and possessed information regarding the Asserted Patents.

138. Despite knowledge of Freshub's patents, Defendants have sold, used, offered for sale, and continue to sell, use, and offer for sale, the '094 Accused Products, disregarding Freshhub's patent rights. Defendants have therefore acted recklessly, and continue to willfully, wantonly, and deliberately engage in acts of infringement of the '094 Patent, justifying an award to Freshhub of increased damages under 35 U.S.C. § 284 and attorneys' fees and costs incurred under 35 U.S.C. § 285.

139. Defendants' infringement has caused and is continuing to cause damage and irreparable injury to Freshhub, and Freshhub will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

140. Freshhub is entitled to injunctive relief, damages and any other relief in accordance with 35 U.S.C. §§ 283, 284 and 285.

**COUNT VII**  
**(Indirect Infringement of the '094 Patent)**

141. Freshhub repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

142. Defendants have induced infringement of at least Claims 1-19 of the '094 Patent under 35 U.S.C. § 271(b).

143. In addition to directly infringing the '094 Patent, Defendants indirectly infringe the '094 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including customers, purchasers, users and developers, to perform one or more of the steps of the method claims, either literally or under the doctrine of equivalents, of the '094 Patent,

where all the steps of the method claims are performed by either Defendants, its customers, purchasers, users, and developers, or some combination thereof. Defendants knew or were willfully blind to the fact that it was inducing others, including customers, purchasers, users, and developers, to infringe by practicing, either themselves or in conjunction with Defendants, one or more method claims of the ‘094 Patent, including Claims 1-19.

144. Defendants knowingly and actively aided and abetted the direct infringement of the ‘094 Patent by instructing and encouraging its customers, purchasers, users, and developers to use the ‘094 Accused Products. Such instructions and encouragement included, but is not limited to, advising third parties to use the ‘094 Accused Products in an infringing manner, providing a mechanism through which third parties may infringe the ‘094 Patent, and by advertising and promoting the use of the ‘094 Accused Products in an infringing manner, and distributing guidelines and instructions to third parties on how to use the ‘094 Accused Products in an infringing manner.

145. Amazon updates and maintains help and customer service sections on its website which cover in-depth aspects of operating Alexa with the Accused Products in an infringing manner. Further, Amazon advertises on its website the Accused Products infringing Alexa features and instructs consumers on how to configure and use the Accused Products in an infringing manner. *See, e.g.,* Exhibits 36–38,

[https://www.amazon.com/gp/help/customer/display.html?ref=hp\\_bc\\_nav?ie=UTF8&nodeId=201952240](https://www.amazon.com/gp/help/customer/display.html?ref=hp_bc_nav?ie=UTF8&nodeId=201952240); <https://www.amazon.com/gp/help/customer/display.html?nodeId=202009680>;

<https://www.amazon.com/gp/help/customer/display.html?nodeId=201602230>.

146. Defendants’ indirect infringement of the ‘094 Patent has injured and continues to injure Freshub in an amount to be proven at trial, but not less than a reasonable royalty.

147. Defendants' infringement has caused and is continuing to cause damage and irreparable injury to Freshub, and Freshub will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

148. Freshub is entitled to injunctive relief, damages and any other relief in accordance with 35 U.S.C. §§ 283, 284 and 285.

### **PRAYER FOR RELIEF**

WHEREFORE, Freshub prays for judgment and relief as follows:

A. An entry of judgment holding that Defendants have infringed and are infringing the '153 Patent, '810 Patent, '408 Patent, and '094 Patent; and have induced infringement and are inducing infringement of the '810 Patent, '408 Patent, and '094 Patent;

B. A preliminary and permanent injunction against Defendants and their officers, employees, agents, servants, attorneys, instrumentalities, and/or those in privity with them, from infringing, or inducing the infringement of the '153 Patent, '810 Patent, '408 Patent, and '094 Patent and for all further and proper injunctive relief pursuant to 35 U.S.C. § 283;

C. An award to Freshub of such damages as it shall prove at trial against Defendants that is adequate to fully compensate Freshub for Defendants' infringement of the '153 Patent, '810 Patent, '408 Patent, and '094 Patent, said damages to be no less than a reasonable royalty;

D. A determination that Defendant's infringement has been willful, wanton, and deliberate and that the damages against it be increased up to treble on this basis or for any other basis in accordance with the law;

E. An award to Freshub of increased damages under 35 U.S.C. § 284;

F. A finding that this case is “exceptional” and an award to Freshub of its costs and reasonable attorneys’ fees, as provided by 35 U.S.C. § 285;

G. An accounting of all infringing sales and revenues, together with post judgment interest and prejudgment interest from the first date of infringement of the ‘153 Patent, ‘810 Patent, ‘408 Patent, and ‘094 Patent; and

H. Such further and other relief as the Court may deem proper and just.

Respectfully submitted,

Dated: June 24, 2019

/s/ John P. Palmer

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## **DEMAND FOR JURY TRIAL**

Freshub demands a jury trial on all issues so triable.

Respectfully submitted,

Dated: June 24, 2019

/s/ John P. Palmer

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